



Latest Show Reports From London and New York

Amazing For The Commodore AMIGA[®] COMPUTING[™] *Your Original AMIGA[®] Monthly Resource*

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Telecommunications

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Modem
Rundown
- ◆ 7 Modems Compared



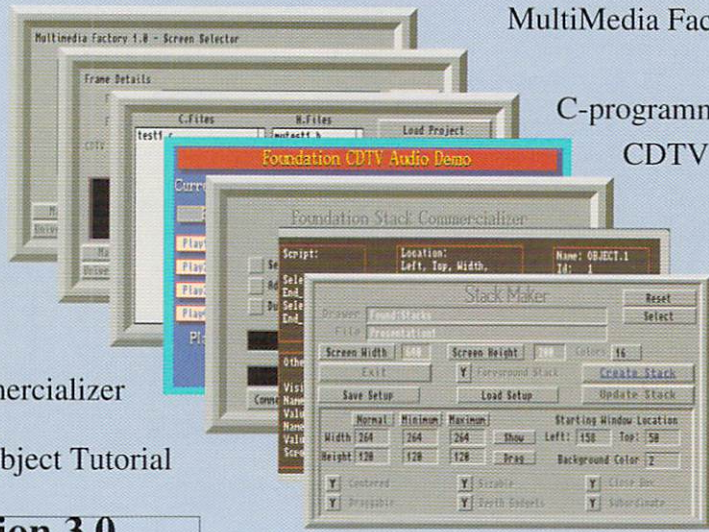
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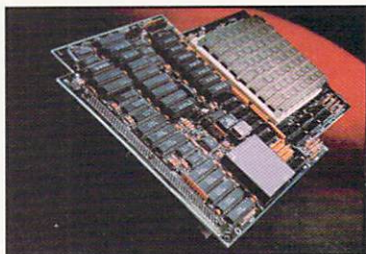


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Cover photograph by
Rick Hess



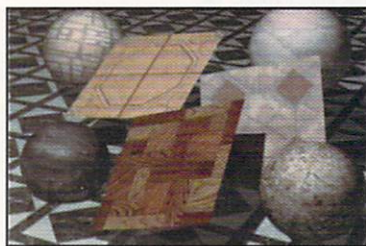
BME HotLinks module
from SoftLogic



G-Force 040 Accelerator Board
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an excited English market.

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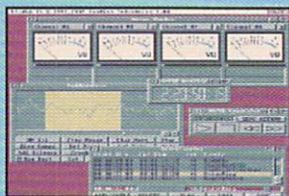
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Studio 16
from SunRize Industries



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column by Merrill Callaway



From the **Video Slot** by
Frank McMahon



Hot Tips offers you a chance
to win *SimAnt*
from Maxis.



Castles
from Interplay

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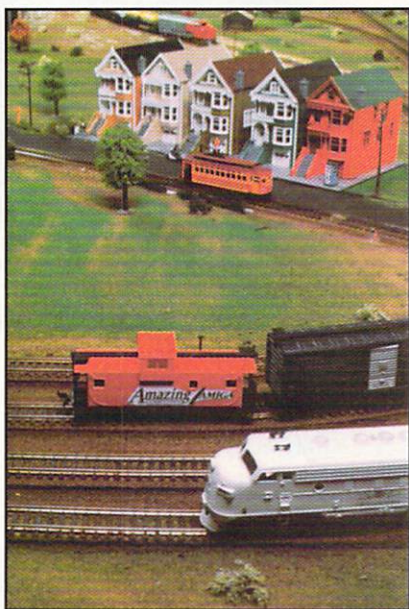
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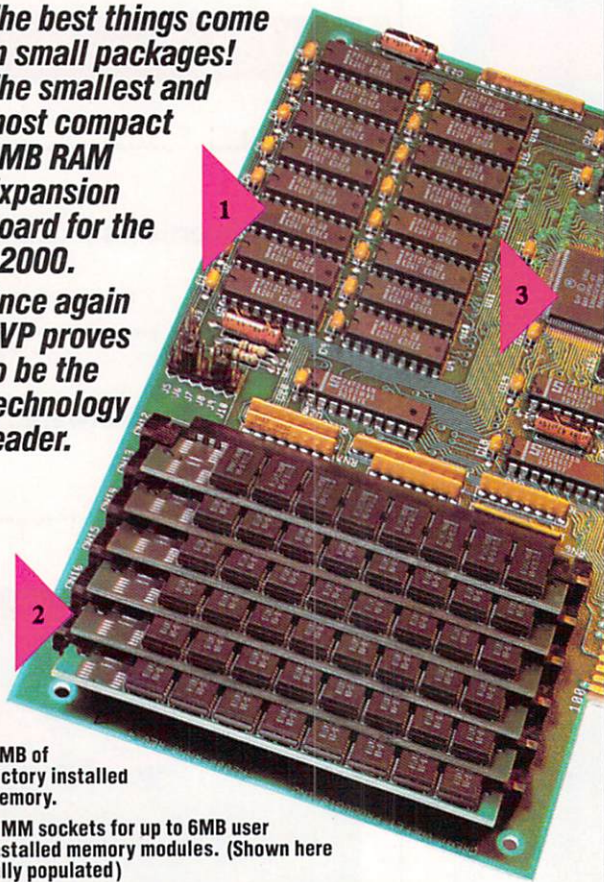
All Aboard the Great Amiga Railway! *AC* goes all-out on the rails with ASDG and Commodore CATS team at the World of Commodore Show in New York City.

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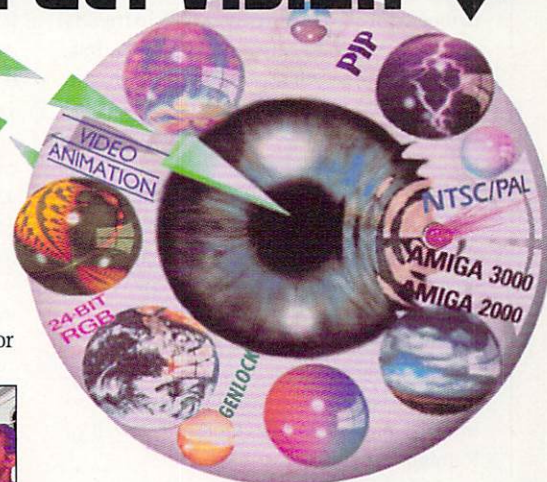


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EDITORIAL CONTENT

Clearing the Desk

Maybe it's the warm weather, or maybe it's this cluttered desk, but there comes a time when I need to clear a few things out of the way. It is amazing (no pun intended) how fast things can pile up on your desk. When you consider that we have covered two trade shows on the Amiga in this issue (see the articles on World of Amiga New York and the Amiga Shopper Show in London) as well as made our own preparations for the World of Commodore (see the Great Amiga Railway article featured in "And Furthermore" on page 96), and we have released a brand new AC's *GUIDE To The Commodore Amiga* and sent the new AC's *TECH* to press, you can begin to see just how many things can stack up.

But as I approach the mound of letters, faxes, press releases, and other assorted material that must be read and acted upon, I know there are several other items, not on my desk, but on my mind that must also be cleared.

First a Word of Thanks

The World of Commodore in New York was an extremely exciting event, not only for our own participation, but because it allowed several organizations to demonstrate what the Amiga can do. I believe that every vendor was very glad they were there. We were able to meet a lot of our subscribers, talk to friends and authors, and even get complaints first-hand about everything from an author who was concerned over our return of his article to individuals who either vehemently supported or denounced the Bandito.

I was not disappointed. With the help of ASDG and Commodore we attracted tremendous attention for the Amiga and its abilities as a control device with The Great Amiga Railway. We were also able to see some of the exciting new applications and peripherals created by Migraph, Great Valley Products, ASDG, Anjon & Associates, and others. So my first thank you goes to Karen Jewell of Ramige.

Ms. Jewell took over the task of producing the New York event, the WOC coming in July in Sydney, and the Pasadena WOC in September in mid-stream. She was the one figure from the now-closed Hunter Group who had been responsible for show promotion and production. Commodore very astutely agreed she could do as good a job as the

previous company and allowed her to continue the show. No one but Ms. Jewell will ever know the amount of hours and dedication it required to get this show ready, but she never complained or faltered. The show's success is due to her.

Ms. Jewell's efforts included not only her own responsibilities, but also the needs of others. Ms. Jewell helped unload and carry materials after hours as well as sooth the nerves of frantic exhibitors. There are many dedicated individuals in the Amiga market, and Ms. Jewell is an excellent example for all of us to follow.

ASDG must also be recognized for their support and expertise. The Great Amiga Railway started as an idea between AC and ASDG, but we would not have been able to successfully demonstrate the Amiga's capabilities without the hard work and dedication of the ASDG staff. Not only did they develop software and hardware that could do more than we were able to build into the railroad in time, but they made it look easy. My special thanks to Dan Esenther and Perry Kivolowitz for their combined efforts.

By the way, I am very excited with what ASDG has produced, not only for trains but for many other Amiga-controlled applications. It will be exciting to see what they will do with this next. However, I believe they need all the encouragement we can offer, so if you would like to see more in model train applications or in any other controlled application environment, please contact ASDG at 925 Stewart St., Madison, WI 53713. (No phone calls please; give them some uninterrupted time to continue with their projects.)

My last thank-you notes are to express my personal gratitude. A special thanks goes to Jeff Scherb at Commodore for his expertise, enthusiasm, and a great collection of sounds that he brought to the project. Both Jeff Gamble and Wayne Arruda at AC were instrumental in building the actual display. Their unique style and close attention to detail not only made the project one of the best-looking displays I have seen at any model railroad show, but insured that the trains ran smoothly and efficiently through the entire exhibition. Nevertheless, this didn't stop them both from adjusting, rearranging, and otherwise playing with the exhibit throughout the event.

Vote Amiga '92 Extended!

With those thank-you notes out of the way, I would like to address the rest of our readers. Your overwhelming response to our Vote Amiga '92 ballots presented in the May issue of *Amazing Computing* is greatly appreciated. The early replies have demonstrated that you not only have some very definite ideas as to which products you feel are the most exciting and deserve support, but also have given us a great many opinions on what you want to see and what you expect from the Amiga marketplace.

Because there is so much interest in the Amiga market, we have decided to extend the deadline for Vote Amiga '92 to August 30, 1992. The results will be printed in the December issue of AC, as well as noted in the Winter '93 issue of AC's *GUIDE To The Commodore Amiga*. In addition, we will hold a special conference at World Of Amiga in Pasadena to announce the results of your votes.

I feel that this is a very special opportunity for members of the Amiga community to express their opinions and hopes. If you have not sent in your ballot, please do so as soon as possible. Your ideas are important to all of us.

Back to the Desk

Now I am still faced with this large stack of work that I know must be done, but there is a bright spot. Although I will be off covering the World Of Commodore in Australia, the rest of the staff at AC is planning to take the week of June 29 to July 5 off. The offices at AC will be closed and everyone will be released from the small chains we have placed under each desk. While this will not keep my desk clean, I have the satisfaction of knowing that AC staffers will be as far behind as I am when we all get back. Maybe that will keep them from piling my desk high when I'm not around.

Sincerely,



Don Hicks
Managing Editor

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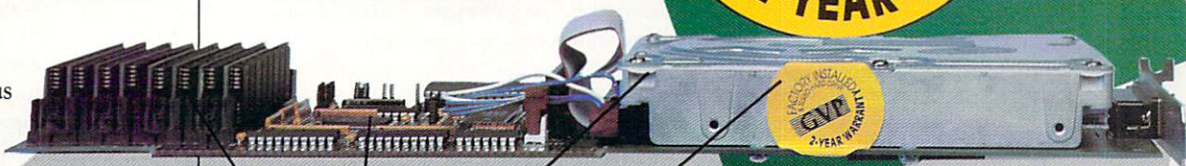
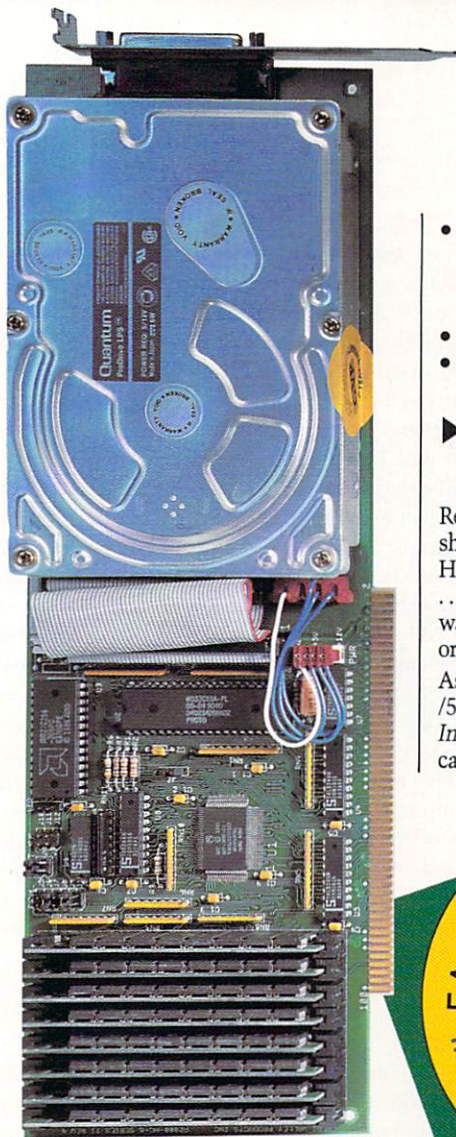
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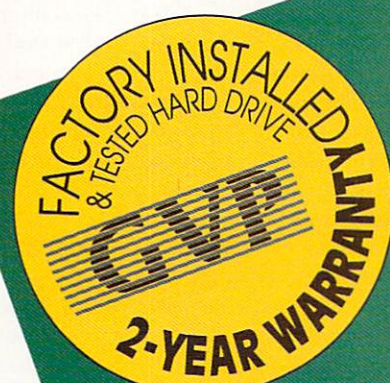
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• Software •

Agony

In times of Lore, Grand Master Wizard Woysieboysie assessed his two apprentices, Leffly and Drizkol, to see who was most worthy of undertaking the task of possessing the secret of universal energy. Leffly was successful and proved himself worthy. Drizkol failed and was driven away in disgrace. As a result, Leffly has undertaken the great quest for universal energy while Drizkol, a sore loser, dispatches hordes of monsters in an attempt to stop Leffly from completing his endeavor.

As Leffly, find and utilize spells and other weapons to defeat Drizkol's minions in this parallax-scrolling adventure. Fight through six levels of marshland, forest, sea, and highlands. Confront your enemies in human form, take flight as an owl, or take the form of a gruesome ghost. Employ the time freeze and tornado spells—your success depends on your skills as a mage. *Suggested retail price: \$49.99, Psygnosis, 29 St. Mary's Ct., Brookline, MA 02146, (617) 731-3553, Inquiry #203*

AsimCDFS

Asimware Innovations released AsimCDFS, a CD-ROM File System for the Amiga. AsimCDFS brings ISO9600, HighSierra, and Macintosh HFS CD-ROM compatibility to the user. AsimTunes, an intuition-based CD audio controller, and FishMarket, a CD-ROM filled with the public domain Fred Fish disks are included with the package.

AsimCDFS is able to read virtually all ISO/HighSierra formatted CD-ROMS, including those with non-standard block sizes. Commodore CDTV discs work with AsimCDFS as well.

A number of CD-ROM drives are supported and any SCSI controller conforming to Commodore's SCSI-Host standard will work fine. *Suggested retail price: \$80, Asimware Innovations, 101 Country Club Drive, Hamilton, Ontario, L8K 5W4, Canada, (416) 578-4916, Inquiry #204*

Boppin'

Boppin' combines both puzzle and arcade elements to provide an experience different from any product on the market. The game uses unusual inventions such as a "re-

verse polarity" storyline in a rescue of evil from the clutches of good, and the "Seppuku" or honor-suicides of the willful Yeet and Boik. Beyond the concepts of good and evil, they are neither heroes nor villains, but agents of balance. Boppin' provides a vast array of puzzles and three levels of difficulty. The first level is essentially a trainer. Level two introduces puzzles of arrangement, trajectory, timing, and accuracy. Level three is utter viciousness and attempts to baffle the human mind. *Suggested retail price: \$39.95, KarmaSoft, P.O. Box 1034, Golden, CO 80402-1034, (303) 490-2939, Inquiry #205*

Broadcast Fonts 3D: Caligari 2 Edition

Unili Graphics announced the release of Broadcast Fonts 3D in a Caligari 2 edition. The package consists of nine complete 3-D object font sets in a variety of traditional styles. Each font set includes caps, numbers, lower case, and punctuation symbols. An international character supplement is available separately.

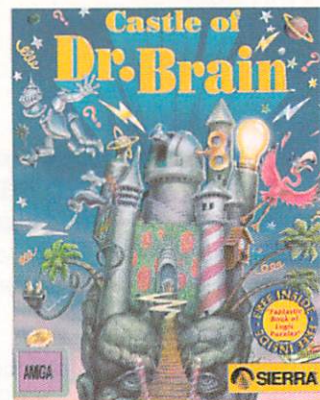
Each character has been carefully crafted to support phong shading for the best possible appearance, despite the angle of view. This version also utilizes the AQPpoints system, which maintains proper angle thresholds during curve generation. A free demo disk is available from Unili Graphics. *Suggested retail price: \$149.95, Unili Graphics, 143 Lorraine Ave., Pittsburg, CA 94565, (510) 439-1580, Inquiry #206*

Castle of Dr. Brain

Billed as genius gymnastics on a computer, this mind-twisting odyssey promises to challenge and entertain youthful minds for hours on end.

With the ultimate goal of becoming Dr. Brain's lab assistant, applicants explore the Doctor's puzzle-filled castle, unravelling scientific mysteries behind every door. Along the way, children will experiment with time, astronomy, robotics, codes, logic, and math. In the end, candidates must match their newly learned principles to real-life job skills before earning the coveted lab assistant position.

Designed by Corey Cole, Dr. Brain features three skill levels, a rock music soundtrack, hand-painted backgrounds that use a highly sophisticated palette manipulation technique, and more. *Suggested retail price: \$49.95, Sierra On-line, Inc., P.O. Box 485, Coarsegold, CA 93614, (209) 683-4468, Inquiry #207*



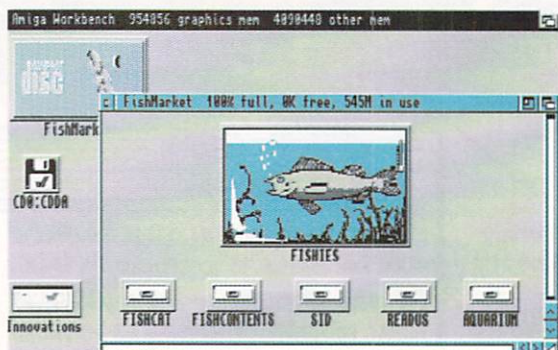
Capstone's Computerized Coloring Books

Three computerized coloring books based on movies and licensed characters have been released by Capstone.

The FernGully Computerized Coloring Book features five different backgrounds and over 20 different characters. Users select a rainforest background, add their choice of characters, then color the pictures with up to 256 colors. A Parent/Teacher guide offers ideas to create your own story books and projects that help save the environment.

The Home Alone Computerized Coloring Book includes over 24 different pictures to color. A Parent/Teacher Learning Guide offers creative activities which promote child safety using the theme of the movie. Ideas to make your own story book and entry forms for Capstone's coloring contest are also included.

The Rock-A-Doodle Computerized Coloring Book features an array of background scenes from the film. Users can place characters, such as Edmond, Chanticleer, Patou, and more, in front of the backgrounds and color them. A Parent/Teacher Learning Guide offers fun activities to help learn about feelings and ways to make



AsimCDFS

THINK ALL '040 ACCELERATORS ARE THE SAME?

THINK AGAIN!

As a high power Amiga® 3000/3000T user you need a 68040 accelerator board for one reason ... and one reason only ... SPEED!

And once you know what makes one 68040 accelerator better than another, the only board you'll want is the G-FORCE 040 from GVP.

WATCH OUT FOR SLOW DRAM BOTTLENECKS

Yes, all 68040 CPU's are created equal but this doesn't mean that all accelerator boards allow your A3000 to make the most of the 68040 CPU's incredible performance.

The A3000 was designed to work with low-cost, 80ns DRAM (memory) technology. As a result, anytime the '040 CPU accesses the A3000 motherboard, memory lots of CPU wait-states are introduced and all the reasons you bought your accelerator literally come to a screeching halt!

Not true for the G-FORCE 040...

SOLUTION: THE G-FORCE 040's FAST, 40ns, ON BOARD DRAM

To eliminate this memory access bottleneck, we designed a special 1MB, 32-bit wide, non-multiplexed, SIMM module using 40ns DRAMs (yes, forty nano-seconds!). This revolutionary memory module allows the G-FORCE 040 to be populated with up to 8MB of state-of-the-art, high performance, on-board DRAM. Think of this as a giant 8MB cache which lets the '040 CPU race along at the top performance speeds you paid for.

SHOP SMART: COMPARE THESE G-FORCE 040 SPECS TO ANY OTHER '040 ACCELERATOR

► 68040 CPU running at 28Mhz providing 22 MIPS and 3.75 MFLOPS!

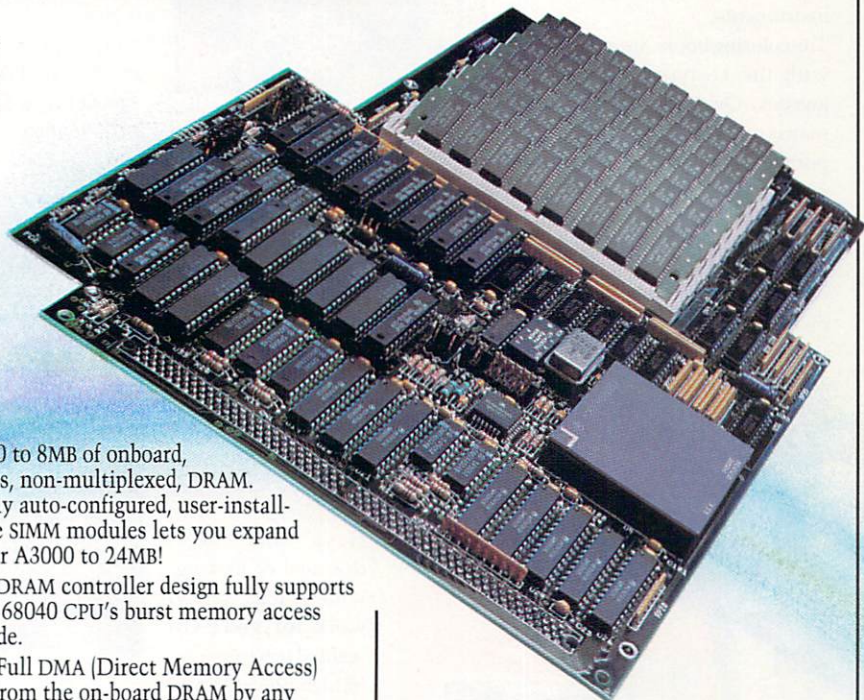
NOTE: The 68040 incorporates a CPU, MMU, FPU and separate 4KB data and instruction caches on a single chip.

- 0 to 8MB of onboard, 40ns, non-multiplexed, DRAM. Fully auto-configured, user-installable SIMM modules lets you expand your A3000 to 24MB!
- DRAM controller design fully supports the 68040 CPU's burst memory access mode.
- Full DMA (Direct Memory Access) to/from the on-board DRAM by any A3000 peripheral (e.g. the A3000's built-in hard disk controller).
- Asynchronous design allows the 68040 to run at clock speeds independent of the A3000 motherboard speed. Allows easy upgrade to 33Mhz 68040 (over 25.3 MIPS!) when available from Motorola.
- Hardware support for allowing V2.0 Kickstart ROM to be copied into and mirrored by the high performance on-board DRAM. Its like caching the entire operating system!
- Software switchable 68030 "fallback" mode for full backward compatibility with the A3000's native 68030 CPU.
- Incorporates GVP's proven quality, experience and leadership in Amiga accelerator products.

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Ask your dealer to run any "RAM disk" performance test and see the G-FORCE 040's amazing powers in action.

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Motorola 68040 CPU running at 28 Mhz

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your own puppets and musical instruments.

The coloring books are easy to use with the keyboard, mouse, or joystick. Over 150 popular dot-matrix and laser printers are supported. Requires 512K. *Suggested retail price: \$29.95 each, Capstone, 14540 S.W. 136th St., Suite 204, Miami, FL 33186, (800) 468-7226, Inquiry #208*



Corporation

Even the most hardened player will be challenged by this new game from Virgin Games. Struggle to match your psychic powers which can heal or destroy.

Corporation features mapping, object manipulation, damage control, security problems, and more. As a special investigator,



try to save mankind from untimely destruction in the 21st century. If you fail, Corporation's mutant robot turns into a genetically engineered war machine that is designed to kill. *Suggested retail price: \$49.99, Virgin Games, 18061 Fitch Ave., Irvine, CA 92714, (714) 833-8710, Inquiry #209*

Easy AMOS: First Steps to Programming

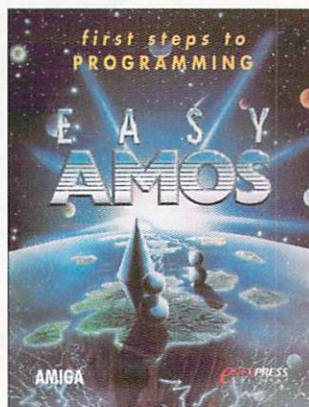
Have you ever dreamed of making your Amiga really work for you? Or wanted to harness its hidden power? Easy AMOS will propel you into a new world where you will learn how to produce impressive graphical effects, create and animate colorful objects, scroll large text across the screen, add music, and more.

This programming course consists of 20 lessons on two diskettes, and a light-hearted user guide. Three sample games that were created using Easy AMOS are included. Easy AMOS's step-by-step approach is a simple route to writing your own professional-looking software. *Suggested retail price: £34.99, Europress Software, Europa House, Adlington Park, Macclesfield, SK10 4NP, England, 0625-859333, Inquiry #210*

Eye of the Beholder II: Legend of Darkmoon

Through a clearing in the haunting forest, three massive towers rise into the night sky—the dread Temple Darkmoon is just ahead.

Like a siren, it inexorably draws you into its nightmarish depths. Discover the secrets of characters in and around the Temple. The game includes a bigger adventuring area, including a forest, temple, catacomb, and three huge towers. Eye of the Beholder II features smarter and meaner monsters, a 3-D point of view, and a point-and-click interface. *Suggested retail price: \$59.95, Strategic Simulations, 675 Almanor Ave., Suite 201, Sunnyvale, CA 94086-2901, (408) 737-6800, Inquiry #211*

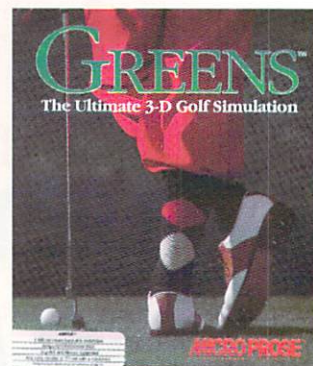


Full 24

Full 24 is a collection of scanned 24-bit pictures for users who work with desktop video, 3-D rendering/animations, and graphic design. Comprised of five different sets of 10, the pictures are ideal for Video Toaster and Imagine owners who need a background and/or texture ready to use. The five sets are backgrounds, textures, brush maps, space/star scenes, and bump map. A demo kit is available for \$15. The complete Full 24 set costs \$175. *Suggested retail price: \$50, AirStream Graphics, P.O. Box 291090, San Antonio, TX 78229-1690, (512) 436-1354, Inquiry #212*

Greens: The Ultimate 3-D Golf Simulation

Greens recreates the fairways and greens of every hole using stunning 3-D technology that allows the player to travel anywhere around the course. Follow the ball as it flies through the air or watch from numerous TV-viewing positions. Greens features modelled

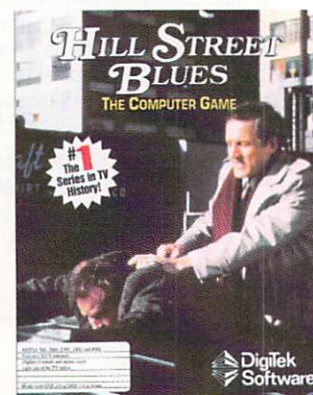


club and ball dynamics, choice of club selection, ball and foot positions, and swing. Varying course conditions add to the wide range of effects that the player witnesses first hand. An easy-to-learn tutorial and a 112-page manual is also included. *Suggested retail price: \$59.95, MicroProse Software, 180 Lakefront Drive, Hunt Valley, MD 21030-2245, (410) 771-1151, Inquiry #213*

Hill Street Blues: The Computer Game

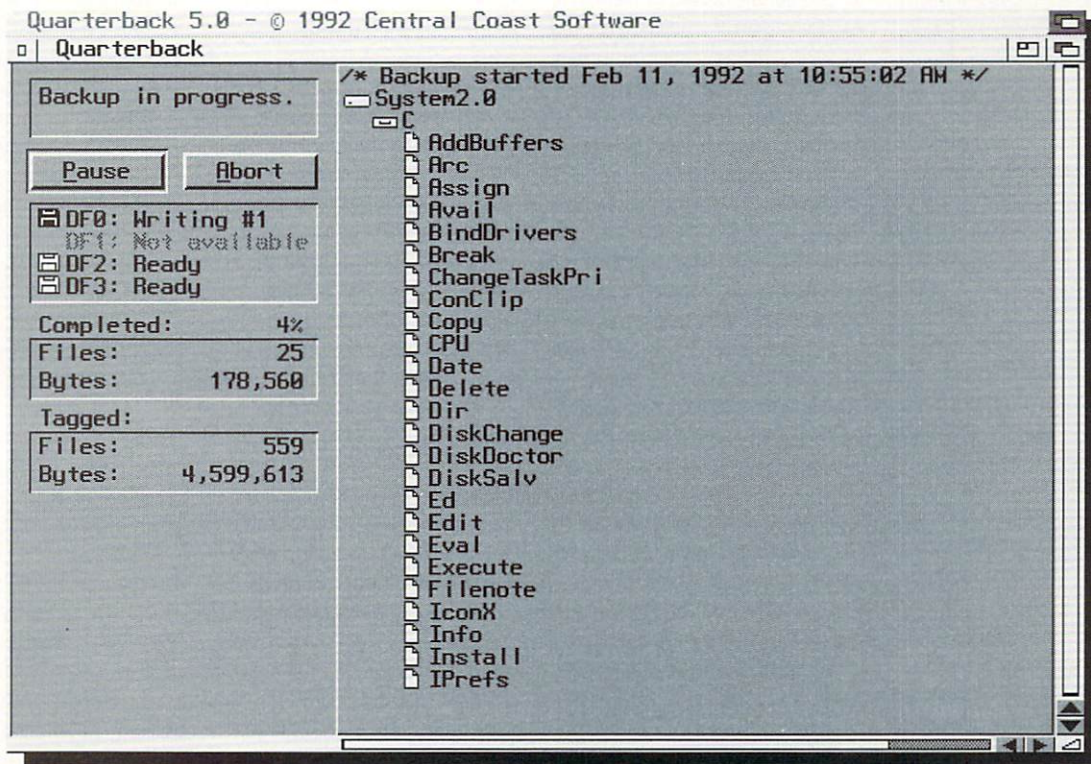
Take on the role of Captain Frank Furillo and deploy the police officers under your command. Solve and control crimes with the help of nine of the most famous characters from the TV series. Up to nine crime incidents, ranging from muggings to bank robberies, can occur simultaneously. Hill Street has the highest crime rate of the district. The object is to increase the crime detection rate and reduce the number of crimes committed. If you fail, the public revolts and the mayor fires you.

Other features include digitized pictures and sounds from the TV series, 3-D graphics, an intelligent city system, and more. *Suggested*



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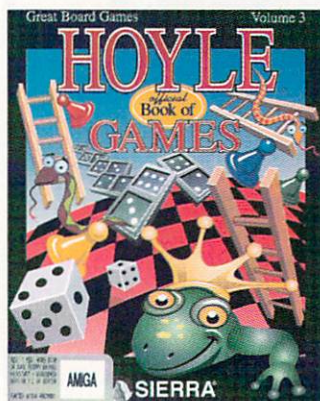
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Austin, Texas 78746

(512) 328-6650 • FAX (512) 328-1925

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New Products & Other Neat Stuff

retail price: \$39.95, Digitek Software, 1916 Twisting Lane, Wesley Chapel, FL 33543, (813) 973-7733, Inquiry #214



Hoyle Official Book of Games: Volume 3

The third release in the popular Hoyle game series from Sierra On-Line has been released for the Amiga. Whether it's the simplicity of Snakes and Ladders or the challenge of Backgammon, Hoyle 3 offers something for every member of the family.

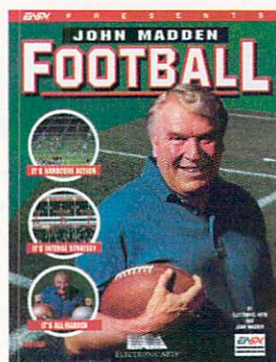
Six new games of strategy and skill—Backgammon, Parchisi, Yacht, Dominoes, Checkers, and Snakes and Ladders—differentiate Hoyle 3 from its predecessors. Hoyle 3's new multiplayer option pits players in head-to-head competition. Like the first Hoyle Volume, a player can challenge 18 different animated computer competitors.

Other features include a stereo soundtrack, crazy sound effects, applause for the winner, history of each game, and more. 1MB of RAM is required. *Suggested retail price:* \$49.95, Sierra On-line, Inc., P.O. Box 485, Coarsegold, CA 93614, (209) 683-4468, Inquiry #215

John Madden Football

Electronic Arts released the Amiga version of John Madden Football, the best-selling sports software

game in the world. Players can combine John Madden's hard-hitting style with the stunning graphics of the Amiga system. John Madden Football, the latest game from the Electronic Arts Sports Network (EASN) lineup available for the Amiga, features 17 pro-caliber teams and the All-Madden team. Each player is rated on key attributes such as speed, strength, quickness, the ability to catch, and more. Skill positions are rated in up to 11 different areas and interior linemen in up to six areas. See the strengths and weaknesses of the team before getting on the field and adjust the game plan accordingly. Easy on-screen play selection, 3-D field perspective, and IsoVision camera make guiding a team to the league championship a thrilling challenge for any armchair quarterback. *Suggested retail price:* \$49.95, Electronic Arts, 1450 Fashion Island Blvd., San Mateo, CA 94404, (415) 571-7171, Inquiry #216



Leisure Suit Larry I

Leisure Suit Larry in the Land of the Lounge Lizards has been reillustrated and reanimated in a 32-color version for the Amiga. Enjoy the hand-painted backgrounds and life-like animation as Larry explores the city of Lost Wages with Sierra's new point-and-click interface. A fully-orchestrated stereo soundtrack, more than 160 new sampled sounds, and hundreds of new text messages are included. The game comes on four 3.5-inch disks and is hard disk installable. *Suggested retail price:* \$59.95, Sierra On-line, Inc., P.O. Box 485, Coarsegold, CA 93614, (209) 683-4468, Inquiry #217

Mega lo Mania

Play one of four Gods, battling for control of planets, in the godly sport of Mega lo Mania. Control your people, who you direct to multiply and populate and conquer island after island. Begin with cavemen who use simple stick and stone weapons, then help your people advance through the epochs, gaining technological and strategic advantages, inventing newer and more complex weapons, and eventually engaging in the decisive battle for the world. How you allocate your men for the vital tasks of research, manufacturing, mining, and battle, will determine your success. *Suggested retail price:* unavailable, UBI Soft, 1505 Bridgeway, Suite 105, Sausalito, CA 94965, (415) 332-8749, Inquiry #218

Napoleon: The Campaigns 1805-1814

Napoleon: The Campaigns allows you, the player, to take control of either Napoleon's elite Grand Armee or the combined might of the Coalition forces of Austria, Russia, and Prussia. With four campaigns and the ability to play either side, play value is high. Features include supply and attrition, morale and fatigue, tactical battle or quick execution, a save game option, and an option allowing the player to resolve battles using miniature figures. 1MB of RAM is required. *Suggested retail price:* \$49.95, RAW Entertainment, 3027 Marina Bay Drive, Suite 110, League City, TX 77573, (713) 538-3399, Inquiry #219



Phunny Phonemes

Parth Galen has released Phunny Phonemes, an extensive set of spelling exercises grouped by En-

glish phonetic content presented in a game environment. Sixteen "lectures" are delivered by animated computer characters in a classroom setting. More than 100 spelling "tests" can be undertaken at a construction site in outer space, where letter tiles must be arranged to complete the walls of a space station. No initial reading skill is required to play the game.

Phunny Phonemes comes on two non-protected diskettes and includes an 80-page manual. The manual discusses spelling, documents the six additional utility programs, and provides instructions for set-up. Requires 1MB of RAM. *Suggested retail price:* \$33, Parth Galen, P.O. Box 482, Cold Spring, MN 56320, (612) 685-8871, Inquiry #220

Pixel Perfect 24

Pixel Perfect 24 is a 93MB collection of 16 million-color backgrounds and clip art, providing 150 full-screen 752 x 480 images in glorious 24-bit color. This image size is a perfect fit for Video Toaster 2.0, and is designed for professionals working in broadcast, cable and high-end video, 3-D, and color desktop publishing. All images are processed for a 105 IRE limit for assured broadcast video compatibility.

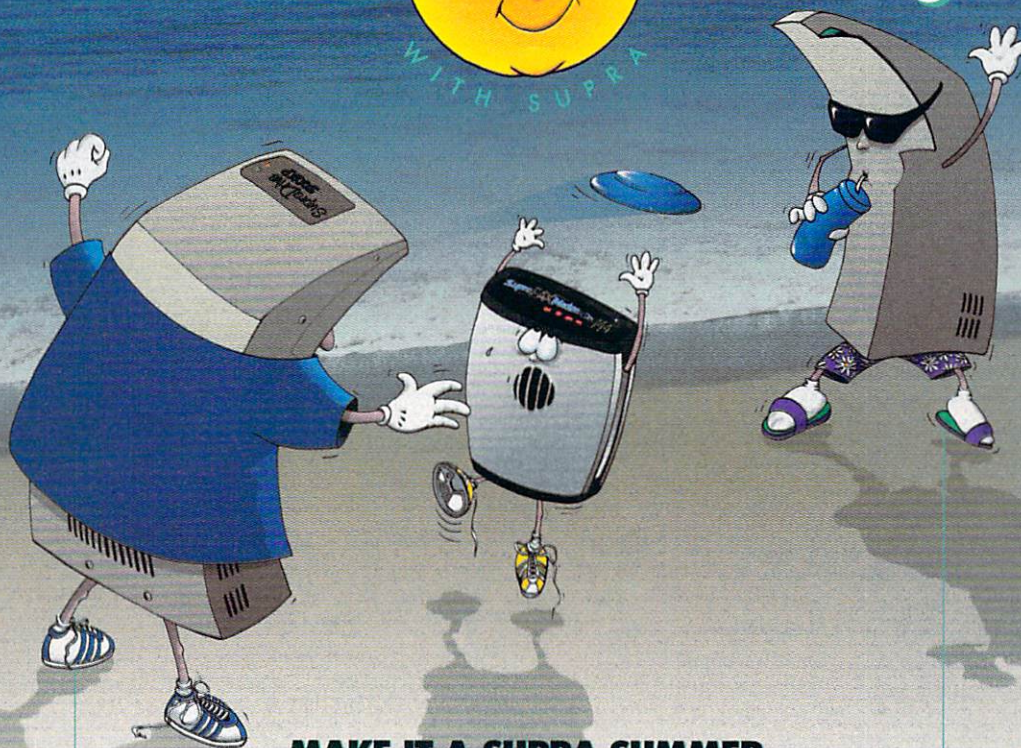
Pixel Perfect 24 consists of images of sunrises and sunsets, mountain vistas, ocean and coastal scenery, countrysides, and more. These graphics can be easily converted into PCX, TIFF, GIF, BMP, TARGA, and other formats for cross-platform graphics applications.

The package comes as a 46-disk collection in the JPEG compression format, or on a 44MB SyQuest. *Suggested retail price:* \$399.95 on disk, \$499.95 on SyQuest, Digital Designs Group, P.O. Box 593, Whiteville, NC 28472, (919) 642-6295, Inquiry #221

Police Quest III: The Kindred

Jim Walls' third action-packed police thriller is almost too real for a computer game. Police Quest III reflects a sad commentary of life on the streets of Anytown, USA. As an added touch of reality, Walls drew from his many life-threaten-

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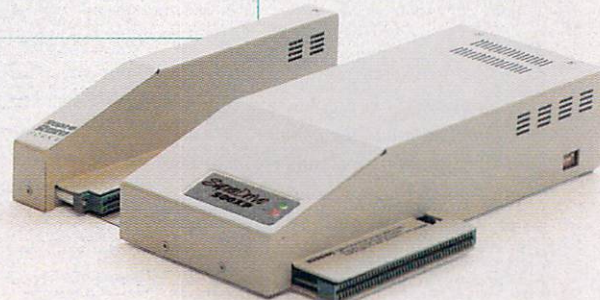
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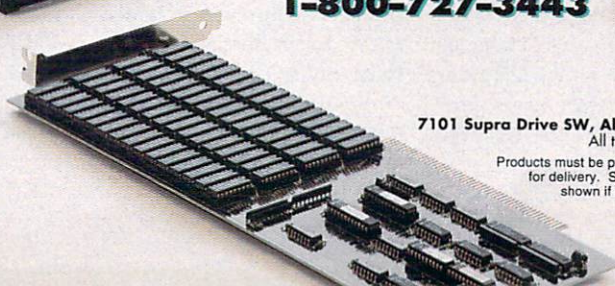
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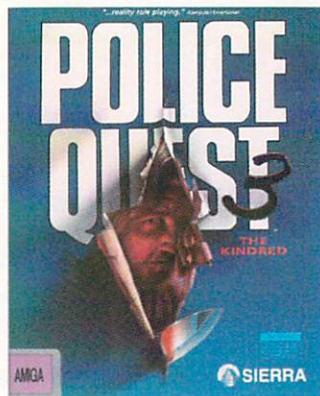
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ing experiences while a member of the California Highway Patrol. Death is the order of the day in the growing metropolis of Lytton. A serial killer is on the loose and Sony Bond's wife, Marie, is the latest victim. She clings to life while Sonny hunts down the deranged psychopath. Using Lytton's PD's state-of-the-art computer, Bonds tracks the killer's path with pinpoint accuracy and recreates the suspect's face with the realistic seven feature composite drawing program. Technology won't solve this case—it takes attention to detail and keen observation skills to put this thug behind bars. Other features include realistic video-captured human actors, a soundtrack scored by Jan Hammer, and more. 1MB of RAM is required. *Suggested retail price: \$59.95, Sierra On-line, Inc., P.O. Box 485, Coarsegold, CA 93614, (209) 683-4468, Inquiry #222*



Polyhedra

Polyhedra is a collection of geometric solids for *Imagine*. This selection of over 50 objects includes the five Platonic solids, ten prisms and anti-prisms, 13 Archimedean solids with their dual solids, and several stellated models. Each polyhedron is provided in two forms—as a wire-frame and as a solid object. The manual dis-

cusses the background of the polyhedron classes, lists the parameters of each polyhedron, includes references for more information, and shows each object. The properties of each polyhedral object lend themselves well to nearly all rendering applications. Skin the wire-frame models to make 3-D pathways or honeycombed objects. Use the solids as dome houses, flatten them to create gems, or join them together to make a polyhedral complex. *Suggested retail price: \$25, Technical Tools, 2 S 461 Cherice Drive, Warrenville, IL 60555, (708) 393-6350, Inquiry #223*

Pools of Darkness

Strategic Simulations released *Pools of Darkness*, the final chapter of the first *Forgotten Realms* series of *Advanced Dungeons and Dragons* "gold box" games. This game propels the player into alternate dimensions on an enormous quest to save the inhabitants of the Moonsea area from evil Bane and his army, once and for all. Characters may be transferred from *Secret of the Silver Blades*. Features 32-color graphics. A cluebook can be purchased separately for \$14.95. *Suggested retail price: \$59.95, Strategic Simulations, 675 Almanor Ave., Suite 201, Sunnyvale, CA 94086-2901, (408) 737-6800, Inquiry #224*

QVCS 1.1

Quma Software released version 1.1 of their Version Control System. QVCS automates the tracking of files as they change during the course of a development project, prevents "collisions" between developers on the same project, retrieves previous file revisions, and more.

New features include support for branching and merging, keyword support, a qident utility to locate QVCS keywords in source, object, and executable files, a qedit utility to apply an edit script to one file to convert it to a new revision of that file, and more. Registered owners of 1.0 will receive a free upgrade. *Suggested retail price: \$129, Quma Software, 20 Warren Manor Court, Cockeysville, MD 21030, (410) 666-5922, Inquiry #225*

Scriptgen

This ARExx script generator lets the user create Video Toaster slideshows. A Trim and Expand function edits the length of your script evenly. Change from 1.0 to 2.0 DVEs by changing projects, change book, auto fades, backgrounds, and GPI triggering to make transitions at exactly the time you wish. Choose the frame pictures and CG pages and let Scriptgen put them together. Scripts may be edited with a word processor and playback is easier than creating the script. Simply enter the name and watch your Toaster perform. *Suggested retail price: \$49.95, Troy Soft, 240 West Shores Rd., Orange Park, FL 32073-8133, (904) 264-8769, Inquiry #226*

The Buddy System for Imagine 2.0

The Buddy System for *Imagine 2.0* is a personal instructor that will guide you through the intricacies of Impulse's powerful 3-D animation rendering program. Enhance your productivity and creativity by learning with a system that gives you instant access to the information you want and need to know—instantly. Other features include an intuitive interface, speech narration, and visual demonstrations. 1.5MB RAM is required. *Suggested retail price: \$49.95, HelpDisk, 13860-12 Wellington Trace, Box 200, Wellington, FL 33414, (407) 798-8865, Inquiry #227*

Transporter

Transporter is a next generation animation control program designed to meet the ever increasing needs of the professional Amiga animator. For those requiring more flexibility for single frame to tape configurations, Transporter is a must.

Transporter provides a link between all popular single frame controllers as well as a link with all popular Amiga frame buffers and display devices. It also allows a great deal of flexibility in generating a script of pre-rendered frames to be sent to tape. Set up loops, reversals, and frame repeats quickly and easily.

Other features include timecode

display, the capability for insert editing, frame accurate sequential frame grabbing, time lapse recording, an easy-to-use interface, batch conversions, and more. *Suggested retail price: \$249.95, Merlin's Software, 1441 E. Fletcher Ave., Tampa, FL 33612, (813) 977-6511, Inquiry #228*



Ultima VI: The False Prophet

As Avatar, the player must plunge into the dark recesses of the Underworld to learn why a race of Gargoyles is attacking Britannia above. Things are not as they appear, and evil is not so easily defined. Along the way, Avatar can pick up anything, from weapons to magic runestones. He can carry on complete, interactive conversations with all he meets in his quest for the truth. The storyline itself is like a book with dozens of final chapters; the outcome is totally dependent on decisions Avatar makes and the action he takes. *Ultima VI* is fully hard drive installable, includes a mouse and keyboard interface, an orchestrated soundtrack, and full-color graphics. Requires 1MB of RAM. *Suggested retail price: \$69.95, Origin Systems, Inc., 110 Wild Basin Rd., Suite 230, Austin, TX 78746, (512) 328-5490, Inquiry #229*

Video Music Box

Digital Expressions has released *Video Music Box*, a utility for composition of background music for use in multimedia presentations. *Video Music Box* is designed to meet the background music com-

Soft-Logik fonts and clip art.

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...get the Soft-Logik Typeface and Graphic Libraries. No other font and art collection for the Amiga comes close in selection, quality and value. Choose from the 600 fonts in our Typeface Library and the 21 volumes of vector clip art in our Graphic Library. Until now, Amiga users have had to look to other computers for quality fonts and clip art. But now the Soft-Logik Typeface and Graphic Libraries provide everything you need in one convenient collection.

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Buying Amiga doesn't have to mean paying more for less. Check out our fonts at just \$12.50 per typeface weight and style (\$100 minimum order). Our clip art is a super deal at just \$99 per volume. We've even bundled some clip art volumes to save you even more money. Call for details.

Compatibility

Soft-Logik clip art is sold in Adobe Illustrator format EPS files. These can be used with any PostScript compatible program, or can be imported into PageStream for editing and printing to any type of printer.

The Typeface Library is available in PostScript Type 1 format, the industry standard for text and graphics applications. Soft-Logik fonts are licensed from font foundries like ITC and ATF and can be used with PageStream 2, Professional Page 3.0 and Saxon Publisher 1.2.

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PostScript and Compugraphic packs sold separately. Call for our free font and clip art poster. DTP users should buy PostScript packs. Other applications which use Workbench 2.04 Compugraphic fonts should purchase Compugraphic packs.

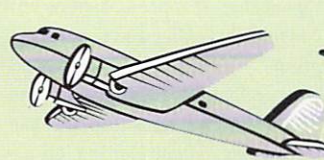
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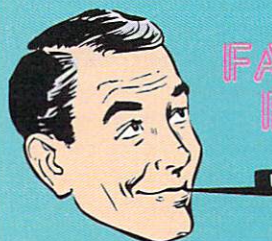
PageStream is a registered trademark of Soft-Logik Publishing Corporation. Compugraphic and Intellifont are registered trademarks of Agfa Compugraphic. Amiga and Workbench are registered trademarks of Commodore Business Machines. Professional Page is a registered trademark of Gold Disk Inc. Saxon Publisher is a registered trademark of Saxon Industries. The clip art in the Graphic Library is monochrome, but can be colorized with PageStream as shown here.

Circle 115 on Reader Service card.

The Fighting Forties



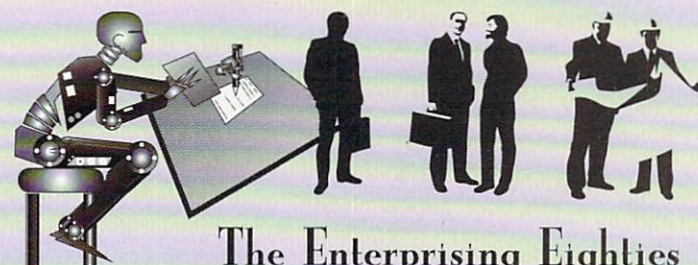
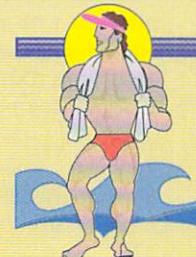
THE FABULOUS FIFTIES



THE PSYCHEDELIC SIXTIES

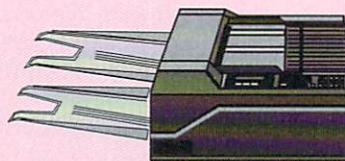


The Swinging Seventies

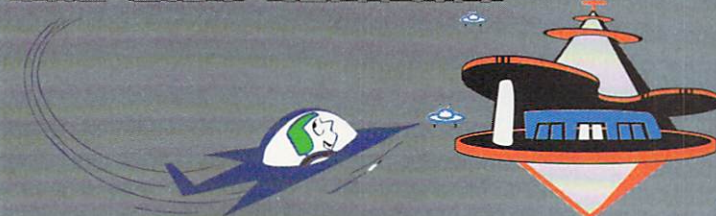


The Enterprising Eighties

The Nervous Nineties



THE 21ST CENTURY



New Products & Other Neat Stuff

positional needs of professionals using multimedia presentations in their work.

Video Music Box assists composition by generating basic instrumental parts for common musical styles with pre-arranged patterns and chord progressions. Addition of new melodies, chord arpeggios, or fills fitting the chord progression is accomplished using special note editing tools. Specific time-length music tracks having multiple segments with different tempos and volumes can be directly produced. Music tracks can be previewed over either MIDI or internal audio, and saved as both MIDI and IFF SMUS files for application with any multimedia authoring software. An Amiga 2000 with 1MB of RAM and WorkBench 1.3 is required. *Suggested retail price: \$109, Digital Expressions, W6400 Firelane 8, Menasha, WI 54952, (414) 733-6863, Inquiry #230*

Workbench Management System 3.0

WMS 3.0 allows the user to set up and program an unlimited number of programmable buttons which can be assigned to any file. Run programs in any order, sequence CLI commands, execute scripts, and more—all with the click of a mouse-button.

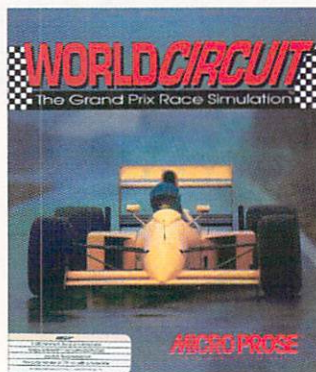
New features include drop-down menus, hot-keys, multitasking, labeled buttons, and more. Six companion utilities—MemoEd, Calendar, Telemate, DirBrowser, Decisive Environment Unit, and SqueezeBox—are also included. *Suggested retail price: \$49.95, TTR Development, 6701 Seybold Rd., Madison, WI 53719, (608) 277-8071, Inquiry #231*

World Circuit: The Grand Prix Race Simulation

Unlike other racing simulations, World Circuit offers all 16 of the Grand Prix's demanding race-

tracks in 3-D representations with variable weather and track conditions.

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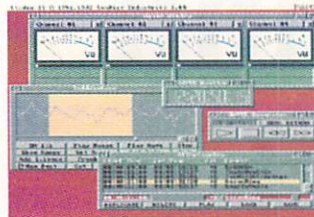
• Hardware •

AD1012 Digital Audio Card

SunRize Industries has begun shipping the AD1012 digital audio card with Studio 16 editing software. Now, Amiga owners can record hours of audio direct to hard disk. The AD1012's built-in SMPTE time code reader allows easy synchronization of digital audio to video tape. It can record, edit, and play back four tracks, and the editing software supports cut, copy, paste, and an SMPTE cue list.

The AD1012 plugs into an A2000 or A3000 and will record 12 bits of resolution at sampling rates up to 100,000 samples per second. Other features include two eighth order linear phase anti-aliasing filters, an Analog Devices 2105 digital signal processor, and more. *Suggested retail price: \$595, SunRize*

Industries, 2959 S. Winchester Blvd., Suite 204, Campbell, CA 95008, (408) 374-4962, Inquiry #233



• Books •

I-Koen Design Guide to PageStream 2

This 20-page reference guide has reference charts for fill styles, half-tone screens, line styles, and object effects at 300 and 1200 dots per inch. It also includes samples of PageStream fonts and PostScript fonts, a reference to writing macros, and a list of keyboard equivalents. *Suggested retail price: \$6.95, I-Koen, 5452 Southfield Center Drive, Box 220, St. Louis, MO 63123, Inquiry #234*

Playfield AMOS Newsletter

AMOS users no longer have to program in a virtual vacuum of AMOS specific information. Playfield, the Journal of Creative Amiga Programming with AMOS, can provide well-documented, timely code and articles geared specifically toward AMOS. Subscriptions are \$20 for six issues. *Send \$1 for a sample issue to: Playfield, c/o Ryan Scott, 5180 NE 6th Ave., Suite 624, Fort Lauderdale, FL 33334, (305) 491-9770, Inquiry #235*

Prides' Guide to Educational Software

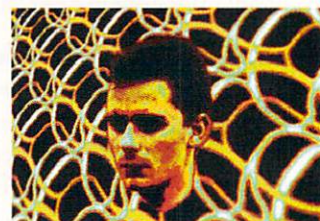
Prides' Guide is designed to teach the complete beginner everything he needs to know about educational computing. You'll find a history of educational software, an introduction to multimedia, software publishers, hardware and peripherals, and more. Five computer terms glossaries and a suppliers index are also included. Bill and Mary Pride review over 750 educational products for the IBM PC, Macintosh, and Amiga. *Suggested retail price: \$25, Crossway*

Books, 1300 Crescent St., Wheaton, IL 60187, (708) 682-4300, Inquiry #236

• CDTV •

Fantastic Voyage

Centaur Software's game based on the voyage of a miniaturized submarine through the interior of the human body is now available for CDTV. Fantastic Voyage challenges players to destroy a blood clot in the brain, fight antagonistic white blood cells, antibodies, and other hazards along the way. Other features include organic graphics and animations by Fleckenstein Art Studios and music and sound effects by Norway's Bjorn Lynne. *Suggested retail price: \$49.95, Centaur Software, P.O. Box 4400, Redondo Beach, CA 90278, (310) 542-2226, Inquiry #237*



Psycho Killer II

Psycho Killer II is the first in a new generation of CDTV titles that use full-screen video, digital audio, animation, and special effects. Using state-of-the-art techniques and a team of actors and technicians, Psycho Killer II has an unparalleled atmosphere and realism.

The Psycho Killer has returned to kill again. Two psychic investigators are on his trail. Terrible forces, beyond their understanding and control, are at work. Who is the hunter and what is the hunted? Using actual images and film-like imagery, the material is uncompromising. The game is not recommended for young children. *Suggested retail price: unavailable, On-line Entertainment, 642a Lea Bridge Road, London, E10 6AP, England, (081) 558-6114, Inquiry #238*

• AC •

SOFT-LOGIK PUBLISHING'S HotLinks Editions

by Merrill Callaway

A new trio of tools makes desktop publishing with *PageStream* 2.2 much easier than before. Ever tried to publish something with a DTP program, only to find that you need to edit the text after you've spent several hours (or even days) formatting it, tagging text attributes, and choosing fonts? Until now, there were only two ways to do it: you edited the text inside the DTP program and got a squinty-eyed headache looking at the fuzzy bit-mapped screen fonts while waiting for the screen refresh every time you zoomed in to read that 8-point type; or else you exported the text to a word processor or editor, but later had to save, re-import, and re-format/tag the text in *PageStream*. Neither alternative was exciting. Soft-Logik integrates your *PageStream* DTP environment with the *HotLinks Editions* software. There are three programs, three manuals, a reference card, and two disks in the package. *HotLinks* (for data exchange), *PageLiner* (for editing text), and *BME* (for bitmap editing) are the program names.

The Edition Links

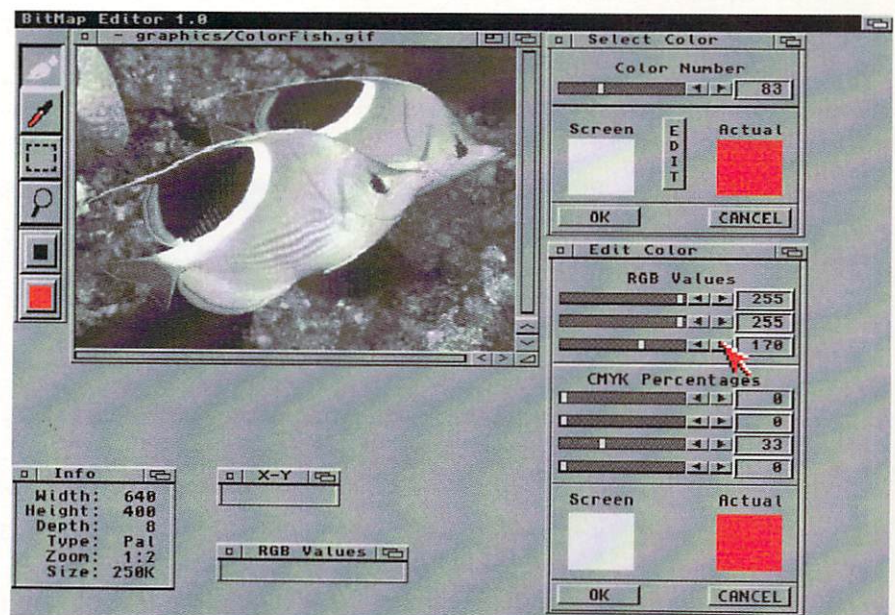
The *HotLinks* program establishes real-time linkages between your DTP program (*PageStream*) on one hand, and your text editor *PageLiner*, or the *BME* (to retouch IFF bitmaps) on the other. The overall idea is to be able to make changes in one environment that will be reflected automatically in the other, preserving all your tags and text attributes, or image updates. The changes reflect in the other program only if *HotLinks* is running. There are several terms and definitions to keep straight to understand what happens: substitute the words "publish" for the normal word "save," and "subscribe" for the normal "load" used in file operations on the Amiga. Whenever you are in one or the other of *HotLinks*-compatible programs, you initially "publish" your text or graphics to a master file called an "edition" when you wish to exchange data with another program. A document may have several editions for different parts of it. You can "subscribe" to an "edition" which another program "published" or "updated" previously, work on the data—edit text or bitmapped data—and "update" the edition. Now the documents linked to this edition will reflect the changes automatically next time you load, save, or update them. The "edition" is a linked file that represents the latest version of something—text or bitmap—and this data may be accessed by any program which subscribes to it. *HotLinks*

is really like having a special "load" and "save" function for every section of a document you want to link to other programs for data exchange. In fact, you have to get used to not "saving" a file, but rather "updating" one that you have "subscribed" to. In *PageStream* part of the Edit Menu (with the words Publish, Subscribe, Update, and Information) which is usually ghosted becomes active when *HotLinks* is run. *PageLiner* and *BME* have a separate *HotLinks* section in their menus. Just as *PageStream* has save and load functions, so do *PageLiner* and *BME* in case you want to use them as stand-alone programs.

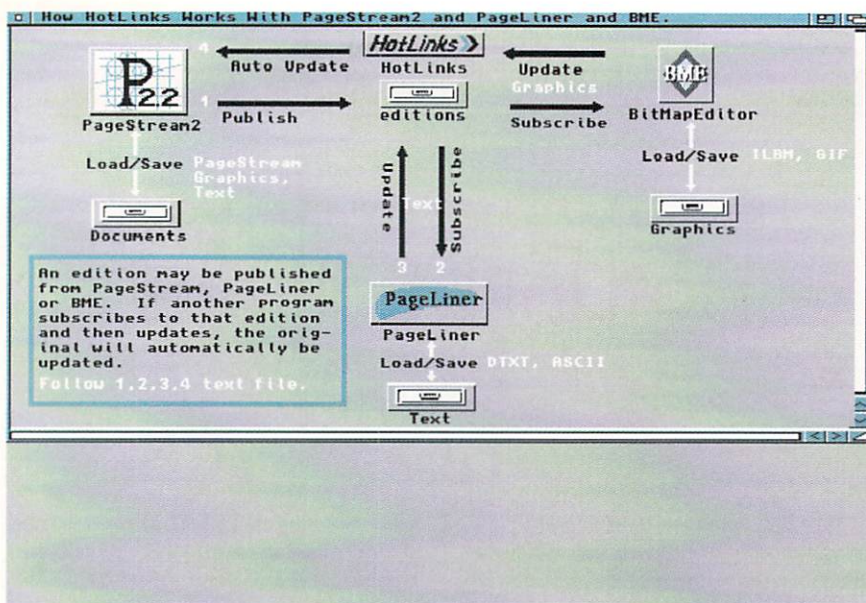
A Sample Session

Let's follow a chunk of text through an edit session with *HotLinks*. You can start with any *HotLinks*-compatible program. Start in *PageStream* with a new document called "HLE.ps". Let's say it's a column with a title and the first sentence, tagged as "title" and "body," respectively. We want to finish writing the article in *PageLiner*. Run *HotLinks*. In *PageStream*, select all text and then "pub-

lish." A requester appears in which we may give our edition a name. Soft-Logik calls their *HotLinks* text-exchange format DTXT, which preserves tags and formats and fonts, etc. The "publish" requester will fill in a suggestion: "DTXT in HLE.ps" as our edition name, but you may call it anything. There is also room for text comments and descriptions as well as gadgets to determine security access to read and write to the edition. After we "publish" the document as the suggested edition name, we exit *PageStream*, and open *PageLiner*. A small bar appears at the top of the WorkBench. Select the *HotLinks* menu from the *PageLiner* program, and "subscribe" to "DTXT in HLE.ps". A window opens and the text from our *PageStream* document appears. There is a small window at the bottom, showing the name of the tag (if any), the font, the style and size, for the text under the cursor, along with a word count. We can edit the text in *PageLiner* and "update" it when we would normally save it. Then, next time we load HLE.ps in *PageStream*, it will contain all the text we entered in *PageLiner*, formatted and tagged appropriately.



BME: The bitmap editor.



A Unique Kind of Text Editor

PageLiner operates like any other text editor except for this preservation of the formatted text. It can also serve as a stand-alone ASCII text editor, but it's no TurboText by Oxxi, the paragon of text editors. (My dream would be to see TurboText made HotLinks compatible!) There is little configurability, and no ARexx support, which I consider a necessity, but it's OK as a basic editor. (*PageLiner supports 24 tool types to provide maximum configurability.—Ed.*) It's certainly easier to edit a document here than inside PageStream! The controls are spartan, and pretty standard, so I'll skip over most of them. The tag menu is different, however, and allows you to set, clear, or load tags created in PageStream, but not to edit or create them—a feature I'd like very much. There are no features to change a string to upper or lower case, nor are vertical blocks selectable. I'd like to see more keyboard shortcuts especially for things like "update." I'd also like to see a timed backup to update automatically. One time my screen froze and I had to do everything all over. There is a spell checker, but it is distinct from the one in PageStream. It's a pity that they're not com-

patible. One standard spelling dictionary seems to me the prime candidate for HotLinks data exchange! According to Soft-Logik, the next version of PageStream will use PageLiner's dictionary. The manual is adequate and well illustrated. However, the tutorial for HotLinking PageLiner has a small problem. In Exercise #2, a file was named PageLiner.DTXT and stored as an IFF DTXT file. It should have been PageLiner.TEXT, an ASCII text file. This mistake has been added to the readme file in the PageLiner drawer.

The BitMap Editor

What goes for text in HotLinks DTP goes for bitmaps, too. BME is a handy little retouching editor to fix up or resize pictures in your publications. It loads standard IFF ILBM and GIF formats. As with text, once published to an edition, the pictures linked to that edition in other documents all change automatically as BME is updated. BME does not display image colors, although they are retained internally and may be edited one at a time and seen on a color square. The BME screen has a toolbox. The tools allow you to select various sizes and shapes of brushes;

pick colors from an image; outline an area for zooming or filling or cloning or cutting/pasting; magnify or shrink an area; and pick colors for a brush and/or edit palette. Some of the controls open pop-up menus and windows to continue the functions down one level as in brush color/edit palette. There is a standard menu, too. Cut and paste allows you to set the transparent color for some interesting compositing effects. The illustrated manual is thorough and contains tutorials for most operations, which are very intuitive anyway.

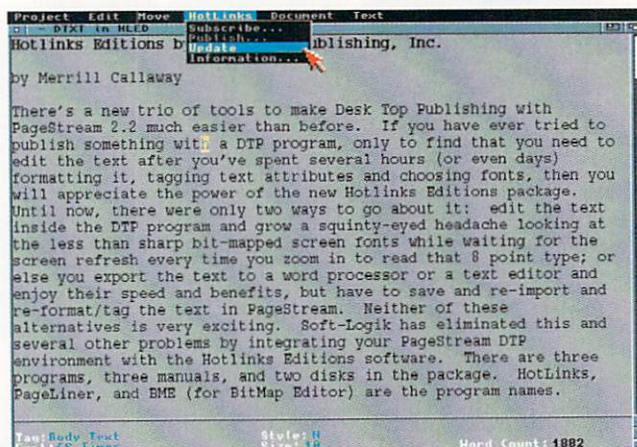
HotLinks Ties it Together

HotLinks enables linkages and updates between programs. Soft-Logik recommends running it at startup. KillHL is a program to remove HotLinks. Sometimes you need to kill links and re-publish something; for example in PageStream, when you copy a column of text, delete the text in the copy, and insert new text, you will need to kill the links first or else your "old" column will contain the text of the "new" column since you "updated" it. There are programs to look at lists of editions, delete editions, and programs for implementing security with passwords and login/logout procedures. If you don't want anyone changing your files, it's a good idea to use these features. "Perm" is an option that lets you be permanently logged on if you want.

Installation

Don't let the automatic installation icons lull you into thinking that's all there is to it! These icons do install what you need, but there remain several errors and omissions that did nothing to make me a happy camper initially. Automatic install icons tend to make one believe that installation is automatic. The thing is that the install icons *do not* upgrade PageStream for you to a HotLinks-compatible version. I struggled with some very weird program behavior until I called Soft-Logik. They smugly pointed out the "obvious" readme file I'd missed inside the PageStream patch directory drawer. I thought I had printed all the readme files, but somehow missed this one because it was inside a drawer. There was no reference to any sort of patch in the main readme file, only an indirect "make sure you read all the readme files..." I felt pretty dumb that I'd missed the patch until I tried to patch according to Soft-Logik's "obvious" readme file. I first tried the WorkBench method. It didn't work! Neither did their CLI version. Oddly, this made me feel better. Anyway, here's how I patched PageStream to work with HotLinks:

Top: The Hotlinks.
Right: PageLiner text editor.



1. Determine whether you bought PageStream 2.2 *new* or received the *upgrade*.

2. Insert the HotLinks Editions Program Disk in DF0: and open a shell to

```
copy DF0:PgS2.2HL_Patch/pgs22.pch
to Work:PageStream/
```

assuming your PageStream2 program is in the Work:PageStream/ directory, and you've bought PageStream 2.2 as a *new* product. Copy instead, the file pgs22u.pch if you received the *update* for PageStream 2.2.

3. In the shell, execute the patch program, lpatch. At the prompt > (for *new*):

```
>DF0:lpatch -oPageStream2.new -ppgs22.pch
PageStream2
```

or, (for *update*):

```
>DF0:lpatch -oPageStream2.new -ppgs22u.pch
PageStream2
```

Don't forget that extra "-p" in front! Lpatch is a Lattice binary patch utility that takes an output file prefixed by -o and a patch file prefixed by -p and the filename to be patched as arguments. I found this out by entering lpatch at the shell prompt and the argument

template came up. Soft-Logik's script doesn't include the -o argument to lpatch and did not work on my system. (According to Soft-Logik, The -o argument is optional and not needed, which is why it was not included in the script. Not including the -o argument will not cause lpatch to fail.—Ed.)

4. Verify that PageStream2.new is there and a little larger than the old program. Then rename PageStream2.new as PageStream2 and you are done.

I also found that the HotLinks automatic install script (run from the icon with the plug and socket) has a glitch regarding System 2.04. When it copies the HotLinks assigns and paths to your user-startup, it uses C:path which is wrong; "path" is an AmigaDOS 2.04 built-in command and does not reside in your C: directory. The path will not be added unless you change C:Path... to simply Path... (edit your sys:s/user-startup after installation).

Conclusions

I'm glad I bought HotLinks Editions, notwithstanding my brief frustration in setting it up. Once I got HotLinks going, I really

appreciated what I can do with PageStream DTP. It's a good move in the right direction. In the future, I'd like to see full ARExx implementation in all Soft-Logik products, more user configurability through ARExx—as in TurboText, tag editing in PageLiner, a HotLinks-shared dictionary, automatic update/backup in PageLiner, and automatic installation that does just that.

•AC•

HotLinks
Price: \$99.95
Soft-Logik Corporation
11131 Towne Sq. Ste. F
St. Louis, MO 63123
(314) 894-8608
Inquiry #200

Please Write to:
Merrill Callaway
c/o Amazing Computing
P.O. Box 2140
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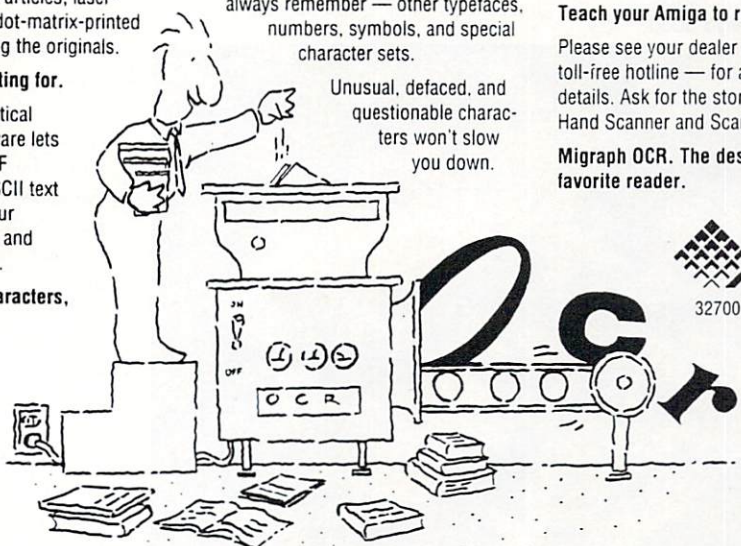
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Circle 157 on Reader Service card.

GREAT VALLEY PRODUCTS'

G-Force 040

by Richard Mataka

The GVP G-Force '040' for the Amiga 3000 has finally begun shipping. Has it been worth the wait? Does it deliver the power as expected? The answer to both questions is an inarguable *yes*.

The G-Force '040' Manual may not be much to look at, but the G-Force '040' board certainly is. If you have been around the computer industry for any length of time, you can appreciate quality. The GVP board is of quality design and the workmanship in the PCB layout and manufacturing shows. As a matter of fact if you look closely at the GVP board you will see that this is Revision 5 of this same board. This ascertains that GVP has been very diligent in the design, preparation, and release of this 68040 processor board.

G-Force '040' Manual

The manual for the board is a concise 60 pages in length and tells you everything that you need to know about the '040' board operation and installation.

Software Installation

The Software Installation of the board is just as important as the hardware installation. The first thing you must be aware of is that the G-Force '040' board will work only with AmigaDOS 2.04 or later. You must have this version of AmigaDOS installed in your Amiga 3000 system for the board to operate. These ROMs are now widely available from recognized Amiga dealers and you should have no problems with their purchase.

Installing the software is simple with the included G-Force distribution disk and by following the detailed instructions provided in the manual. After you have completed the hardware installation of your new G-Force '040' board you place the supplied distribution disk into drive "DF0:" and boot the system. Once the system has successfully booted, you will see the AmigaDOS 2.0 Workbench and need to double-click on the G-Force '040' distribution disk.

Once the window opens, you will see an icon for the Installer program. The Installer program is a new feature that has been provided by Commodore to automate and sim-

plify the process of adding new software to your system. This program provides a standard point-and-click way for the novice to send every program or data file to its appropriate disk location. The Installer program moves 3 GVP programs from the distribution disk to your destination hard drive. The three programs that are moved are "GVPCpuCtrl", "GForcePatch", and "68040.library". The function of each of these programs is fully described in the manual.

'040' Board Operation

Upon power-up or system reset, the 68040 acquires control of the Amiga 3000 by requesting the bus from the Amiga's 68030 which disables the native processor. Once the 68040 has gained control of the system, it can fetch instructions and data at an accelerated speed.

The G-Force '040' board has the ability to run in a Synchronous or Asynchronous mode of operation. This means that the board can run either dependent or entirely independent of the Amiga 3000 system clock. Since the processor that is supplied with the G-Force board is 28 Mhz, which is faster than the standard Amiga 3000 25 Mhz the board should be run in Asynchronous mode. If you were to run the board in Synchronous mode, the maximum speed of the G-Force board would be 25 Mhz. The default mode for the board is the Asynchronous mode which means that it will operate at the faster clock speed.

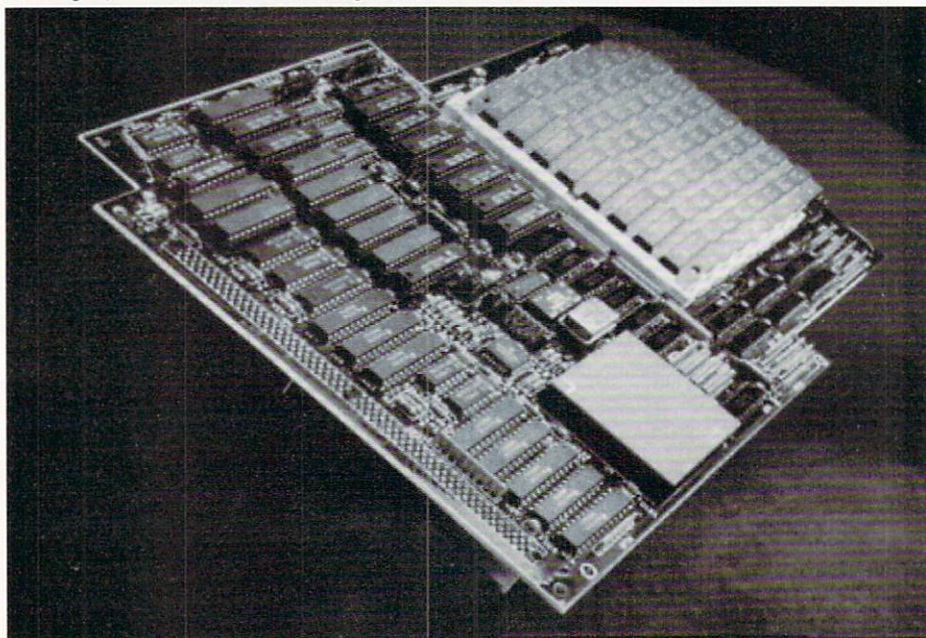
Finally, the G-Force '040' board can be disabled altogether for backward compatibility whenever a particular program may require only the true 68030 functionality.

Benchmark Performance Parameters

Before we begin to look at the Benchmark results we need to define the parameters under which the Benchmarks were taken. First we must set the basis for our comparison study. For these tests, I have chosen a stock Amiga 500 with 512K Chip RAM and no Fast RAM as the base point. At this point, we will measure the expected performance results of an Amiga 2000, 2500, 3000 25 Mhz and the GVP G-Force '040' board. The results of the other machines have already been predefined within the program's parameters. We are measuring the GVP board against these results.

Additionally, the type of code that we shall be using for our tests is the standard 68000 code and not any specialized 680X0 code. Also, I have chosen not to use any of the special co-processor functions as this again would not be fair when comparing the results to a stock Amiga 500 since these machines

Below: G-Force 040 brings power, speeds, and high-performance to the Amiga 3000.



AMAZING COMPUTING

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"The Big Three in DTP," a desktop publishing overview by Richard Mataka
 "The Amiga Desktop Publisher's Guide to Service Bureaus," by John Steiner
 "M.A.S.T.'s Parallel Port SCSI Adapter," An inexpensive way to attach a hard disk to your A500, by Dan Michaelson
 "All in One," programs for the beginner, by Kim Schaffer

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"MaxiPlan Plus," a review by Chuck Raudonis
 "CDTV," a comprehensive look at Commodore's hottest item
 "HAM-E," a review introducing an excellent 24-bit color video board, by David Johnson
 "Pixel 3D," review by John Steiner
 "Professional Page 2.0," a review of a complete and truly professional desktop publishing package by Rick Broida

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"Firecracker 24," a review of the latest in 24-bit video boards from Impulse by Frank McMahon
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 "PageStream," another entry in the word processing/desktop publishing software line, by John Steiner
 Also, extensive Summer CES coverage!

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 "The Jerry Bryant Show," AC interviews Jerry Bryant, whose secret weapons for producing four hours of television a week are the Amiga and the Video Toaster
 "Understanding Genlocks," by Matt Drabick
 "Super 8 Meets the Amiga," easy film-to-video transfer with the addition of Amiga graphics, by Patrik Beck
 "Looking Good with B.A.D.," a review of Centaur Software's disk optimizing program by Rick Manasa
 Also, AC continues the extensive coverage of the Summer CES in Chicago!

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 An AREXX double feature and a special education section

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 "Why Should You Use the CLI?" three sound reasons to use the command line interface, by Keith Cameron
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 "DeFuzzie," a puzzle-solving program for brain teasers, by Scott Palmateer
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 "Finding the Right Multimedia Fit," by Dave Spitler
 "Images in Dentistry," by Ken Larson
 "Signmaking on the Amiga," by Karen Pringle
 "Perfect Pages," how to produce PostScript-quality pages without buying a PostScript laser printer.
 ALSO: Coverage of Toronto's World of Commodore Show

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"The Miracle Piano Teaching System," by Christopher Piper
 "DeluxePaint IV," by R. Shams Mortier
 "Semi-Automatic Painting and Animation," by Kevin Lude
 "Screen Photography," taking pictures of your Amiga screen, by Pat Murphy
 Also, a special section on Amiga Graphic Design and a look at some special Amiga Artists.

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Highlight include:

"Foundation," a review by Dave Spitler
 "AdPro 2.0," review by Merrill Callaway
 "ATonce Plus," review by Rich Mataka
 Also, construct a database using your favorite authoring system, customize your start-up sequence, and create and produce your own video!

Vol. 7 No. 5 May, 1992

Highlights include:

"Pelican Press," a review of this entry-level DTP package by Jeff James
 "AdIDE/40 Amiga 500 Hard Drive Kit", review by Merrill Callaway
 "Building an Amiga MIDI Interface", super project by John Iovine
 Also: AC's annual Desktop Publishing Overview! This issue includes a look at the top DTP packages as well as a study of printers, fonts, and clip art available for the Amiga.

Vol. 7 No. 6 June 1992

Highlights include:

"Freeze Frame Video Recorder", review by Merrill Callaway
 "HP DeskJet Color 500C", review by Richard Mataka
 "MREAD", a programming project by Chuck Warden
 Plus: Don't miss an exciting edition of our AREXX feature by Merrill Callaway or 3-D animation with DPaint IV in "The Video Slot", by Frank McMahon.

AC's TECH

AC's TECH, Vol. 1, No. 1

Highlights include:

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 "AmigaDOS, EDIT, and Recursive Programming Techniques," by Mark Pardue
 "Building the VidCell 256 Grayscale Digitizer," by Todd Elliott
 "An Introduction to InterProcess Communication with AREXX," by Dan Sugalski
 "AmigaDOS for Programmers," by Bruno Costa
 —and more!

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 "Intuition and Graphics in AREXX Scripts," by Jeff Glant
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 "A Meg and a Half on a Budget," by Bob Blick
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 "C Macros for AREXX?" by David Blackwell
 "VBROM: Assembly Language Monitor" by Dan Babcock
 "Programming the Amiga's GUI in C—Part II" by Paul Castonguay
 —and more!

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Highlights include:

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 "Programming with the AREXXDB Records Manager" by Benton Jackson
 "The Development of a Ray Tracer—Part I" by Bruno Costa
 "The Varafire Solution—Build Your Own Variable Rapid-Fire Joystick" by Lee Brewer
 "Using Interrupts for Animating Pointers" by Jeff Lavin
 —and more!

AC's TECH, Vol. 2, No. 1

Highlights include:

"Build Your Own SCSI Interface" by Paul Harker
 "CAD Application Design—Part III" by Forest Arnold
 "Implementing an AREXX Interface in Your C Program" by David Blackwell
 "The Amiga and the MIDI Hardware Specification" by James Cook
 —and more!

Back Issue Index

What have you been missing? Have you missed information on how to add ports to your Amiga for under \$70, how to work around *DeluxePaint's* lack of HAM support, how to deal with service bureaus, or how to put your Super 8 films on video tape, along with Amiga graphics? Do you know the differences among the big three DTP programs for the Amiga? Does the AREXX interface still puzzle you? Do you know when it's better to you use the CLI? Would you like to know how to go about publishing a newsletter? Do you take full advantage of your RAMdisk? Have you yet to install an IBM mouse to work with your bridgeboard? Do you know there's an alternative to high-cost word processors? Do you still struggle through your directories?

Or if you're a programmer or technical type, do you understand how to add 512K RAM to your 1MB A500 for a cost of only \$30? Or how to program the Amiga's GUI in C? Would you like the instructions for building your own variable rapid-fire joystick or a 246-grayscale SCSI interface for your Amiga? Do you use easy routines for performing floppy access without the aid of the operating system? How much do you really understand about ray tracing? The answers to these questions and others can be found in *AMAZING COMPUTING* and *AC's TECH*.

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	WritePixel	Sieve	Dhrystone	Sort	BeachBall	SWhetstone	DWhetstone	FTrace	CplxTest
Amiga 500—NFR	1	1	1	1	1	1	1	1	1
Amiga 2000—FR	1.01	1.02	1.02	1.03	2.2	1.02	1.02	1.01	1.02
Amiga 2500—20	2.71	4.49	2.66	3.29	6.29	2.85	2.89	2.94	2.86
Amiga 3000—25	4.55	8.12	5.68	7.44	11.47	5.36	5.39	5.37	5.4
GVP G-Force '40	7.35	18.13	21.39	24.41	36.2	18.75	19.12	19.02	18.52

All tests were performed using a standard Amiga 500 with no fast RAM as a reference point. Tests were conducted using Lamonte Koop's AIBB software. Results show the speed in which the systems perform different tasks. Using the A500 as a reference point, you can see that the WritePixel test was performed 7.35 times faster on the GVP board than on a stock 500.

have no co-processors. A majority of programs have been written only for the 68000 computer and have not been optimized for the 68030 or 68040 processors. So, the graphics and numerical data that are provided by AIBB will show you results across the entire family of Amiga processors with the newest addition being the GVP G-Force '040'.

Finally, the last performance option that must be defined is the location of the DOS ROM. I have used the GVPcpuCtrl program to have the 68040 processor running in Asynchronous mode and also to copy the ROM data to RAM. This will increase the performance and insure that we are running the system at an optimum level.

Tests

Figure 2 is the first snapshot that provides information about the system we are testing. The upper portion of this display consists of CPU/FPU/MMU data and state information. Other information in this section includes the display type in use, as well as the Agnus and Denise custom chip revisions of the system. The other information that is displayed on this System Status screen is the System Stack memory location, AIBB Process Stack memory location, Operating System version, Operating System location, Node Name, Address Range, Priority, Port Size, and Node Size. All of this information is fully explained in the AIBB documentation and is

provided here just to illustrate the system on which the tests have been run.

The next sections detail all of the tests that have been performed as well as the accompanying graphics which show the results. Each of the AIBB included tests have been run with multitasking disabled and with the AIBB program given a Task priority of 15. Reading each test result you will see how each computer platform from the Amiga 500 up to and included the GVP G-Force '040' performed. The following are the descriptions of the standard tests that have been run to Benchmark the GVP 68040 using LaMonte Koop's AIBB program.

Summary

Do the means justify the ends? All that I can say from using the GVP G-Force '040' board is that once used, you will never go back to your original 68030 system again. Your desktop flies when the board is used. Everything is so much faster. All of your programs operate at such an increased speed that if you ever do enable the standard 25 Mhz 68030 mode you will feel as though your system is crawling. If you really want to realize just how fast your system has become, boot a standard Amiga 500 and open your Workbench.

Finally, the G-Force board has been pre-designed for future upgrading to faster pro-

cessors. The board is rated at accepting 68040 processors up to 36 MHz which means all you do is change the Oscillator and the Microprocessor chip for faster versions to see an increase in speed. You will not have to purchase a whole new board to increase your computing power.

The financial expense of purchasing this board is definitely worth it. Also, remember that time is money and all of your applications will run much faster. The GVP G-Force '040' is a work of art. The careful attention to detail in the board's physical design, the 40 nanosecond on-board RAM, and its built in upgradability make this an investment in your Amiga 3000's future.

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THE BLUE RIBBON SOUNDWORKS'

SuperJAM!

by John Steiner

The ad read "Never before has writing music been so easy! ...you can create your own chords, rhythms and bass lines, whether you read music or not. ...Use SuperJAM! to create and synchronize soundtracks for animation, video and multimedia presentations." I was intrigued. I use my Amiga 3000 system for video titling and animations, and I also cart it around with me to deliver presentations to educators and businesses. I use *AmigaVision* as a presentation medium, and *ProVideo CGI* for video titling. Both my presentations and videos could use music at appropriate times, and in the hopes of delivering salable videos, I have wanted to avoid copyright restrictions of commercial music titles. Music buyout CDs are expensive for my limited needs. A music buyout CD contains several musical selections which you can use either live or on video tape without having to purchase performance rights from BMI or ASCAP. Music buyouts are an audio equivalent to clipart graphics in the desktop publishing industry, and like clipart, I never can seem to find the appropriate choice for my presentation.

Programs such as *Deluxe Music* or *Bars & Pipes Professional* are fine for those who are more musically inclined than I am, but even though I have some musical background and can read sheet music, I am by no means any kind of composer, nor can I play more than simple melodies on a musical keyboard. It looked like SuperJAM! could provide the music for my presentations and I wouldn't have to worry about legal performance fees or lawsuits for copyright violations.

It is from the perspective of desktop video or multimedia presentation user that I have evaluated SuperJAM! The program provides features which I would categorize into three major functions. First, it helps in the composition and creation of music by providing musical styles and rhythms that even novice users can utilize to generate professional sounding music. Secondly, it provides the tools to perform that music using three different techniques, one of which requires extra music hardware. It's third function, for those who have a higher degree of musical expertise than I currently have, is the ability to create sophisticated rhythms and melodies and make them part of SuperJAM!'s libraries. A fourth function is the program's ability to integrate into Blue Ribbon Soundwork's *Bars & Pipes Professional*, a powerful object oriented musical composition tool. This review will explore the first three functions and touch upon the fourth.

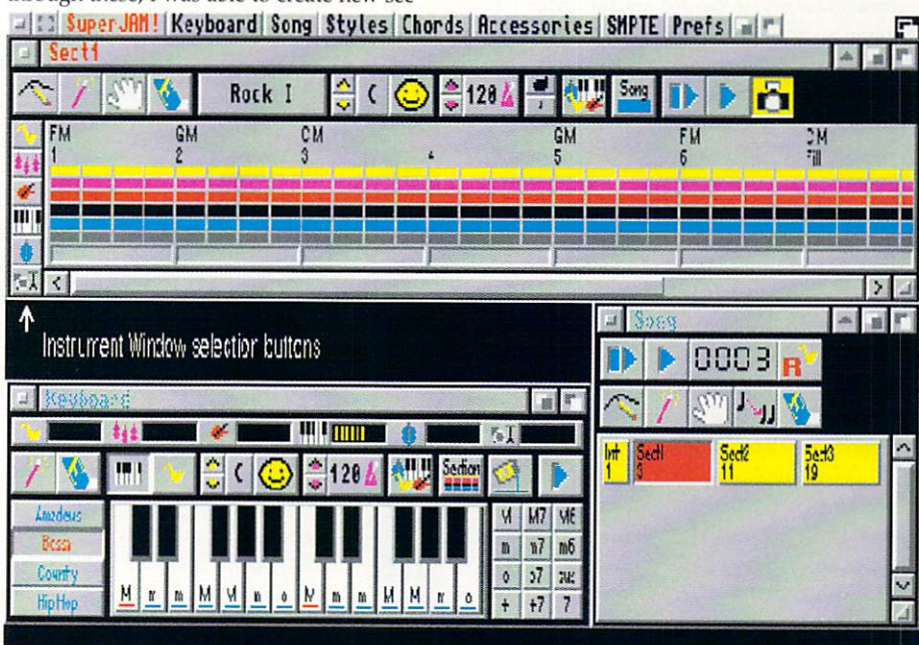
Creating Music with SuperJAM!

SuperJAM!'s opening screen is simple, a pushbutton menubar and a keyboard come up on a custom window when you first start the program. The pushbutton menubar is unique for Amiga applications. Most of the choices on that menu open other windows. You select items from this menu with a click of the left button instead of dragging the mouse while pressing the right button. That makes the standard Amiga menubar available for the currently active window. Almost every window that opens has it's own menubar that is actuated with the right mouse button in the usual Amiga fashion.

The manual's tutorials provided experiences to demonstrate the use of the keyboard window to automatically load and play different musical styles. Once I had worked through these, I was able to create new sec-

tions of music which I put together to create simple songs. I also learned how to record a melody track that plays simultaneously with the "live" band.

In its simplest form, SuperJAM! creates music that has a rhythm and musical style, but it doesn't create melodies. You must do that yourself. While you don't need a melody line in the music you create, especially if the music is background for your video or graphics presentation, a melody adds much to the performance. Creating a melody that fits a song's style and rhythm would be especially difficult for a musical novice. I know that my personal musical limitations have limited my ability to create a decent melody for my songs. I'm sure that like most endeavors that are worthwhile, this skill would improve with practice.



SuperJAM! screen showing an open section window. The arrow identifies one of the six band members which can be selected.

using the Directory button, but it still didn't work right. A call to technical support provided the information that I felt should have been in the manual. I was informed that Turbosound instruments are not compatible with IFF instruments, and what needs to be done is to select IFF instruments you already own—a selection is provided on the AmigaVision distribution disks. When you try to preview a SMUS file, note the name of the instrument that it can't find. The name of the instrument identified will probably have trailing spaces, for example, one instrument I needed was called "piano ". There were two trailing spaces after the word piano. Now use the CLI or a directory utility program to copy a similar pre-existing instrument file to a file that is named like AmigaVision is asking for. In my example, I used the CLI and copied a file I had called "piano". The command I issued was

COPY "INSTRUMENTS:PIANO" TO "INSTRUMENTS:PIANO "

being sure to specify the two trailing spaces. You may not be able to tell exactly how many trailing spaces are required, and I was required to make multiple copies of a couple of instruments until I got it right. Once you have copied this instrument, ask AmigaVision to preview the song again. You will be asked for another instrument. For each instrument requested, you need to go through the duplication process until you are finally presented with a rendition of the song during the AmigaVision Preview process. Don't be surprised if you aren't happy with the sound of the songs compared to their equivalent Turbosound performance.

After the disappointing SMUS rendition, I realized that I would need to use AmigaVision's ARexx interface to work directly with either the TurboPlayer, SuperJAM!'s sample player, or with SuperJAM! itself. Having never before used ARexx, I was apprehensive how this would work. Fortunately, I own Workbench 2.0, so I didn't have to go out and buy ARexx. Experienced ARexx users shouldn't have any problems with implementing ARexx commands with the information I provided in the accompanying sidebar titled "SuperJAM! ARexx Commands For Multimedia Applications".

It didn't take me too long to implement ARexx commands once I experimented with ARexx examples and asked for a little help from someone who was versed in ARexx. If you don't have someone to help show you the ropes, you might spend some time spinning your wheels until you get things working right. One mistake I made which you can avoid, is to try to use your ARexx commands from within your multimedia application

before you really understand how they work. Issue ARexx commands from a CLI and use a text editor to write your ARexx scripts until you can make SuperJAM! or TurboPlayer function as you wish. Then simply load the scripts into your authoring package as required.

Final Comments

The manual is well written, and with the exceptions noted above, complete enough to learn the program. The book is indexed adequately enough that I was able to find every-

thing I needed as I went about my work of learning how to operate the software. It's only major shortcoming of note is the lack of an ARexx command listing. See the sidebar article about using SuperJAM! with ARexx for details on some of those commands.

Software installation is simple, and though SuperJAM! much prefers to be installed on a hard disk, according to the manual, you can install the program on a floppy based system. TurboSound recorded samples will be limited in sound quality and length as the sample must fit in it's entirety on a single

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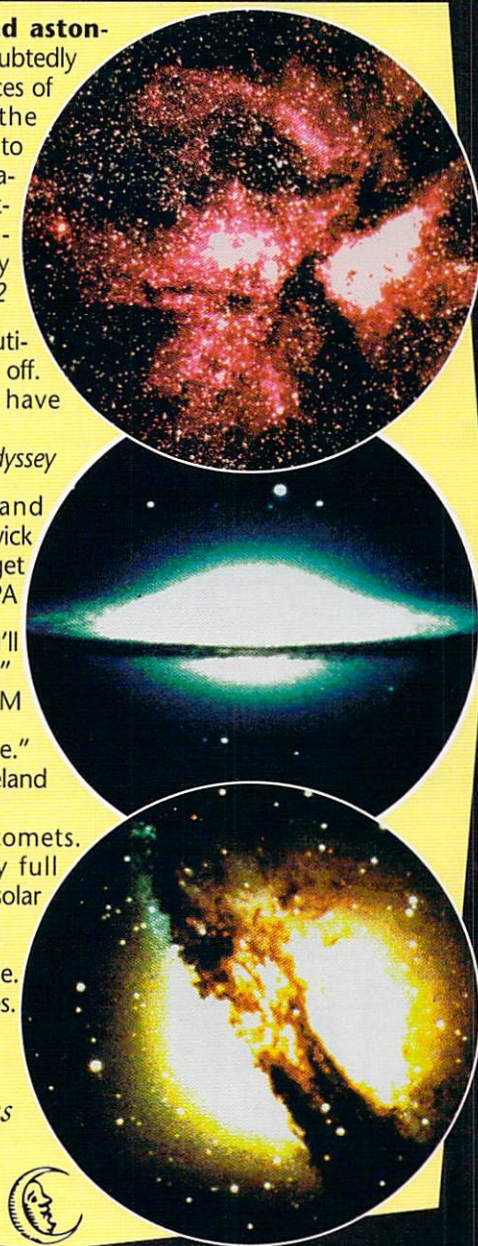
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floppy. To get a feel for how much disk space is required by a sample, I created a song that lasts about 45 seconds. It created a file that was almost 250K in a medium resolution recordings. At that rate, a floppy disk will only hold about two to two and a half minutes of recorded music.

I found two major bugs in the program and verified their existence with Blue Ribbon Soundworks. The first of these is easy to avoid, and I only discovered it by accident. If

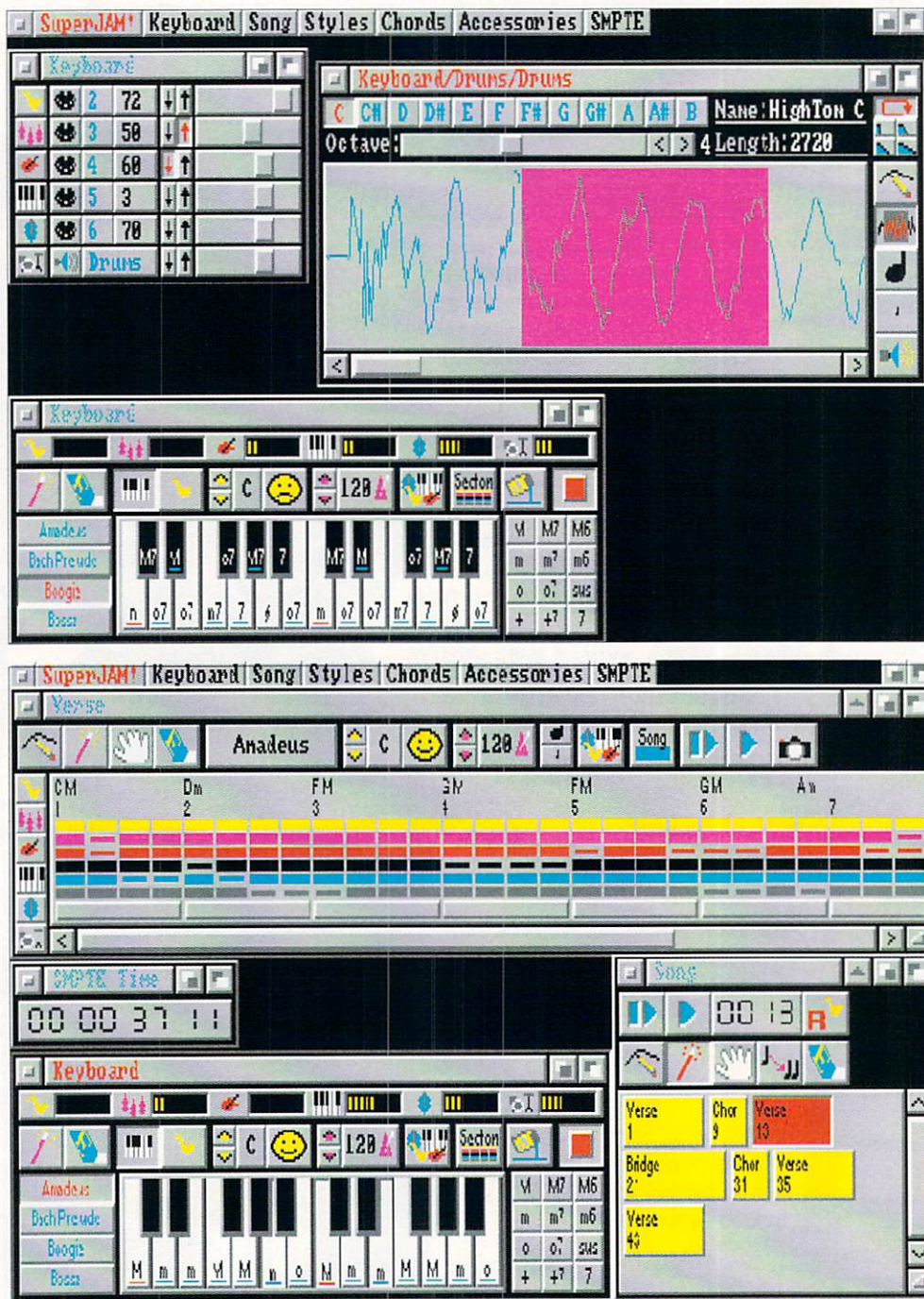
you try to run TurboPlayer at the same time that SuperJAM! is running, you will immediately experience a system crash. Normally this is not necessary anyway as SuperJAM! can load and play TurboSamples directly. I discovered the bug when sometime earlier I had put the SuperJAM! window behind the Workbench window and forgot the program was still operating. I only mention this bug to remind you that you could easily lose a composition if it hasn't been saved. Blue Ribbon's

technical support staff commented that this bug has been fixed. The other bug I found relates to the Section Copy function of the Song window. If you use the Section Duplicate icon to make a copy of a section of music, and then choose Name... from the Section menu to rename the section, you might experience a system crash, or the Turbosound instruments may fail to function properly. My A3000 experienced the latter symptom. Technical support verified the bug and noted

that it was originally reported only two days prior to my discovering the problem. The bug does not occur on all systems, and it took a little while for them to track down as it is not easily repeatable. They provided a workaround for me to pass along to those who have the problem of a system crash. Before renaming the section, open any one of the six instrument windows by clicking on the instrument symbol at the left edge of the Section window, then simply close the window again. Once you have done that, you can rename the section anything you want. This bug has also been fixed, and if you are experiencing the system crash upon using the section rename function, you can send your original SuperJAM! disk in for free replacement.

If you don't experience a system crash upon renaming a section, you might experience what appears to be a timing failure in the generation of Turbosounds. Tech support mentioned that the Turbosound feature is very complex and it can occasionally get confused, creating incorrect internal timing. When that happens, you can correct the problem from the Song window, simply reselect the desired sample rate from the Turbosample menu. This will cause SuperJAM! to reconfigure the Turbosounds and they will again function properly.

SuperJAM! has lived up to most of my expectations, and it is capable of doing everything the ads claim. I'm not so sure how someone with less musical background than I have would fare at generating music that is more complicated than repeating chord progressions. In fairness to the program, I am not that competent as a musician, but I do know the notes on a keyboard, and I under



SuperJAM! screens showing the song and SMPT time windows. The song currently loaded contains four sections. The number below each section name identifies the number of the first measure of each section.

stand many of the terms and techniques that SuperJAM! uses. If you don't know much about music, be prepared to do some outside reading of books identified in the bibliography found in the software manual, or find someone who knows something about music to help you understand those musical terms and techniques you will need to know to successfully create music with the program.

The staff at Blue Ribbon Soundworks have been very helpful, and Todor Fay answered many of my questions quickly and easily. They are dedicated Amigaphiles, and have committed tremendous resources to the development of high quality music software for the Amiga. Their service to the Amiga community must be acknowledged.

If you already have and use Bars & Pipes Professional, you have all the musical expertise you need to use SuperJAM! efficiently. You might be justified in asking why you would need SuperJAM! if you already own Bars & Pipes. SuperJAM! can provide several features and functions automatically as it integrates beautifully with Bars & Pipes. Both programs run from Bars & Pipes Professional's screen.

When both programs are used simultaneously, even professional musicians will find SuperJAM! to be a powerful utility. Use SuperJAM! to create music that can be fed into the Bars & Pipes PipeLines where they can be edited and enhanced with Bars & Pipes advanced tools. Songs created with SuperJAM! can then be scored using the music scoring features of Bars & Pipes.

I know that I will be using music I have written for my own presentations from now on. While no one will mistake my musical work for that of someone who has real talent, the music I create will fill a void I have had in my presentations for quite some time.

•AC•

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SuperJAM! ARexx Commands For Multimedia Applications

The SuperJAM! manual contains a 16-page section on using the software in conjunction with multimedia applications. If you are using TurboSound technology you can control your presentation's music from ARexx. A disk file is included with SuperJAM! that contains a complete listing of all available ARexx commands for controlling the Turbosample player. If you are using a sound module, or want the flexibility and variety of SuperJAM!'s "live" performances, you can use ARexx to control SuperJAM! directly. The writers of the SuperJAM! manual didn't include a list of supported ARexx commands for the program. After some research and a phone call, I acquired a list of ARexx commands which I could use. After compiling the list included here, I found the complete list of commands is located in the SuperJAM! accessories drawer in a file called ARexx.doc. SuperJAM! uses the ARexx address "Bars&Pipes ARexx" when receiving ARexx commands. Both the address and commands are case sensitive.

Here is the background information you will need to understand how to deliver these commands.

1. You must precede each ARexx command with the correct address.

2. You can locate specific parts of a song by any of three measuring standards: Beats & Measures, SMPTE time code or MIDI clock time. The three possible ways to use the LOCATE command are:

LOCATE BEAT measure.beat where measure represents the number of the measure you wish to locate, and beat represents the beat count within that measure.

LOCATE SMPTE hour.minute.second.frame

where hour, minute, second and frame represents the exact performance time as measured by SuperJAM!'s built-in SMPTE clock.

LOCATE CLOCK midiclock where midiclock represents midi clock pulses.

Three example SuperJAM! ARexx commands might be:

```
ADDRESS "Bars&Pipes ARexx" LOCATE BEAT 1.4
ADDRESS "Bars&Pipes ARexx" LOCATE SMPTE 0.0.23.12
ADDRESS "Bars&Pipes ARexx" LOCATE CLOCK 300
```

Here is a list of useful ARexx commands which you can employ to play a "live" SuperJAM! performance during a multimedia presentation.

LOCATE BEAT/SMPTE/CLOCK time will find a specific point in the song. To locate a point exactly 15 seconds into the performance, for example, use

```
LOCATE SMPTE 0.0.15.00
```

START

begins playback at the current point

START BEAT/SMPTE/CLOCK time

begins playback at the specified time. To start playing from the first beat of the 15th measure, you would use

```
START BEAT 15.1
```

STOP

immediately terminates play at the current position.

Since this version of SuperJAM! cannot load songs from disk via ARexx, you will have to preload your song into SuperJAM! before your multimedia presentation starts. If you have multiple songs to play, they will have to be incorporated into one large SuperJAM! songfile. You can use the ARexx LOCATE command to move from one song to another. SuperJAM! requires about a megabyte of RAM to operate, so live performances running in conjunction with a multimedia player will require a system with lots of available RAM.—JS

MICROILLUSIONS'

Genesis - The Third Day

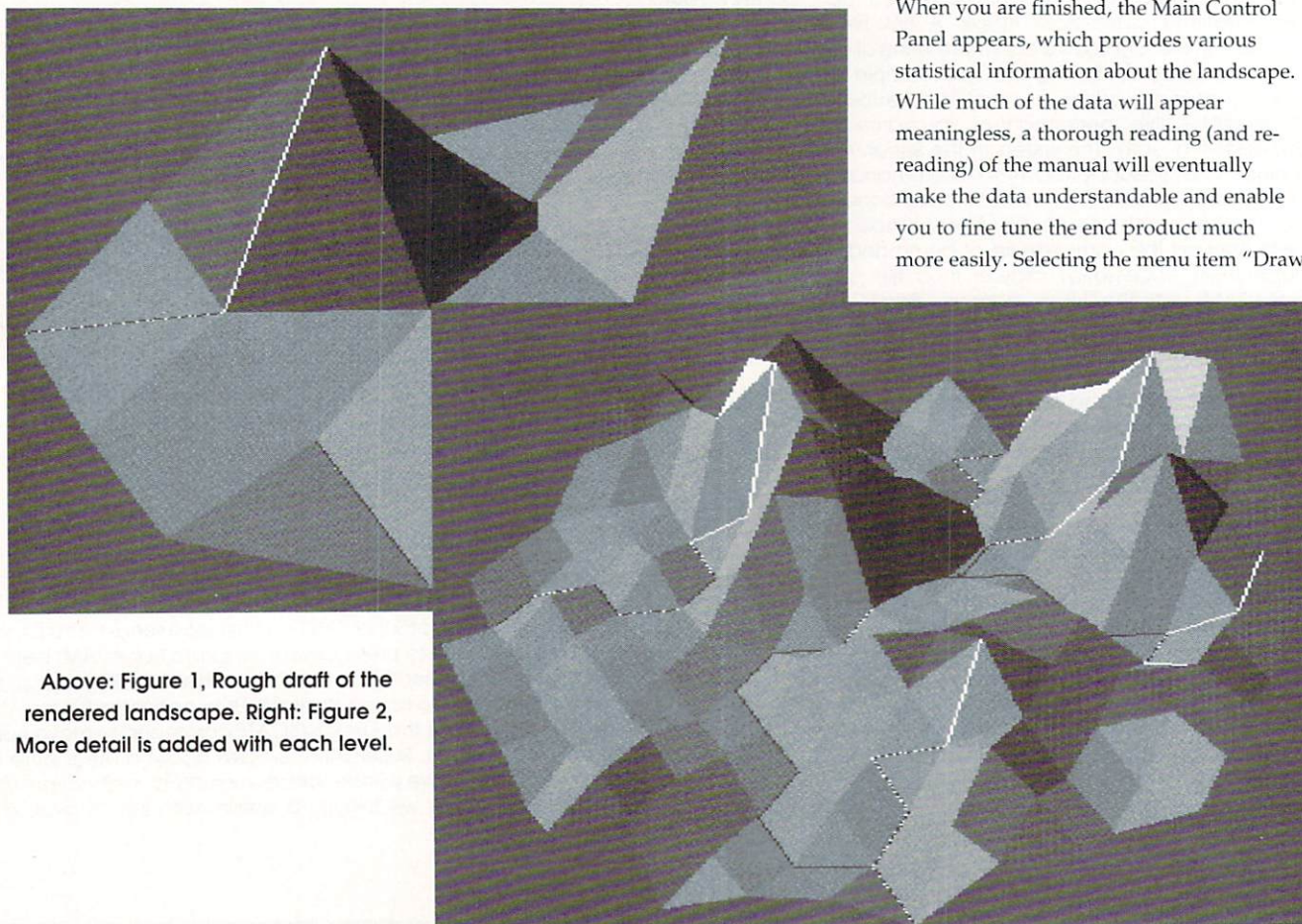
by Steve King

Genesis The Third Day is a powerful landscape generator that can be used by both novices and experienced designers. It is a fractal-based program which essentially means that it draws the scenery as a series of ever-increasing triangles. As they become more numerous and correspond-

ingly smaller, they lose their triangular identity and magically appear as finely detailed geological features, such as mountains, rivers, and lakes. The program can produce a landscape containing 236,000 triangles with 1200 springs and 2500 lakes. The images generated by Genesis TTD can

then be saved as IFF files in both 16 color high, and 32 color low resolutions, and the hi-res image can be converted to HAM. They can also be saved in an "object" format compatible with *Sculpt3D*, *Sculpt-Animate 4D*, *Turbo-Silver 3.0*, or *Videoscape 2.0*. Variable overscan modes of up to 768 x 484 are supported. The program can also produce individual frames for animations and is ARexx compatible.

While the basic operation of Genesis TTD is simple, it does provide the more advanced user with a myriad of options to tweak and refine the ultimate landscape. The program generates the final product in five passes, or recursions. Each successive recursion enhances and refines the landscape and, accordingly, takes a longer period of time to complete. While drawing the image on the first recursion is relatively instantaneous, the fifth can take up to 50 minutes on an unaccelerated Amiga computer. The first step is to take a basic wireframe series of triangles and stretch the vertices upwards and downwards to create a rough semblance of the landscape. Clicking on the connecting lines with the mouse pointer will turn them into springs. When you are finished, the Main Control Panel appears, which provides various statistical information about the landscape. While much of the data will appear meaningless, a thorough reading (and re-reading) of the manual will eventually make the data understandable and enable you to fine tune the end product much more easily. Selecting the menu item "Draw



Above: Figure 1, Rough draft of the rendered landscape. Right: Figure 2, More detail is added with each level.

Picture" will quickly render the landscape in any of five different user-selected modes, and will appear similar to the picture in Figure 1.

Next, you increase the level by selecting "Increase Level" from the menu, and then redraw the landscape in more detail. Figures 2 and 3 indicate the progression through levels 2 and 3. When you are ready to proceed to level 4, you will want to create lakes by filling natural depressions with water and run the rivers. The more of these you select, the longer the process will take. At this juncture, you may want to display the landscape from a different viewpoint and perspective, so select the "Observer View" item from the View menu. In the Graphical Mode, you are shown two screens which let you place the viewer anywhere on the landscape as well as at a particular altitude (Figure 4). You can also select the position of the sun to create your own shadow pattern, as well as the type of lens with which to view the landscape.

Genesis TTD provides many options too numerous to describe which allow you to refine the rendering of the landscape. You can make the mountains more rugged, adjust the coloring of each of the types of terrain, select a number of shading and drawing modes, and manipulate the contouring and slope angles. After you have made your changes, you proceed to the fifth and most time-consuming rendering level and draw your image. As you can see, the image is sharp and quite realistic. The program, however, lacks any real ability to generate skiescapes which would make the scene complete and more realistic. This latter feature; however, is currently under design. While the examples in my review were generated from a tutorial in the manual, my own experimentation from scratch often produced uninteresting landscapes. A more complete understanding of the underlying basis of the program, which can be found in the manual, would have remedied the problem. The manual itself is quite thorough; however, I encountered considerable difficulty in understanding many of the complex mathematical principles discussed. Experimentation with all of the options is probably the only real way to learn how to use Genesis TTD effectively.

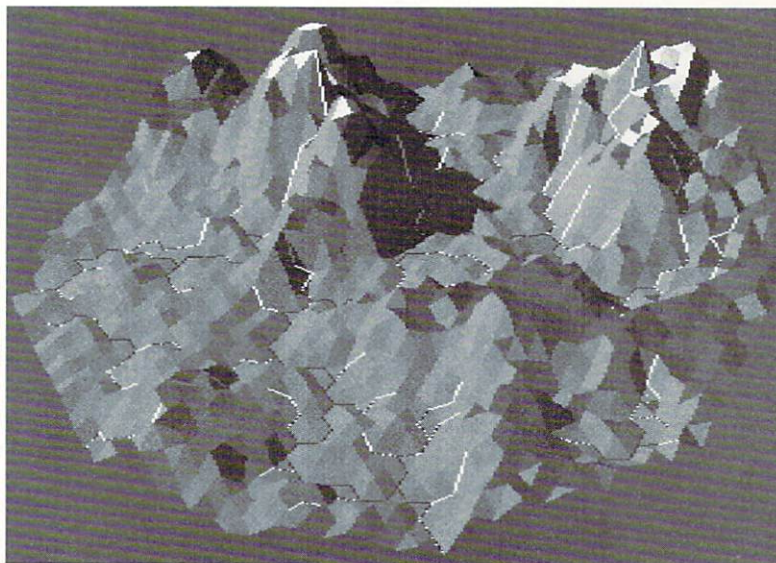
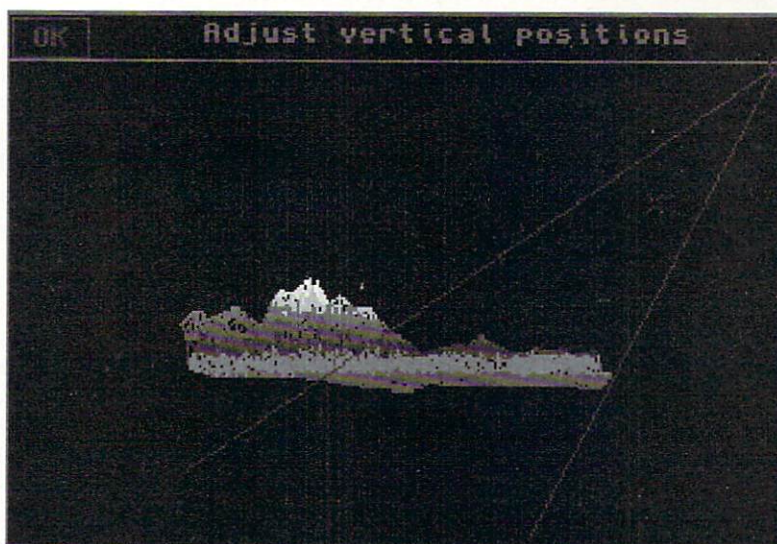


Figure 3 shows the progression of the landscape through level 3. Note the increase in detail.



In the Graphical Mode, you are shown two screens which let you place the viewer anywhere on the landscape as well as at a particular altitude.

The program also provides a script mode which is useful for easily creating and saving a series of pictures of the same basic landscape which, when joined and played as an animation, will let you "fly" around the landscape. By utilizing the "tween" command, Genesis TTD will automatically generate a specified series of IFF images between two user-specified pictures. MicroIllusions has also included a useful utility which incorporates standard DEM files of the United States Geological Survey. MicroIllusions has converted this data and created landscapes of actual locations throughout the United States, the moon, and Mars! While I have not had the opportunity to work with some of the other similar programs on the market, Genesis TTD will create some stunning landscapes which can be used in animations and as

backgrounds in other programs. Be forewarned, however; landscape generation is a tedious and time-consuming process, but the end result can be quite artistic and rewarding.

• A C •

Genesis-The Third Day
Price: \$149.95
MicroIllusions
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Inquiry #239

Please Write to:
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c/o Amazing Computing
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Fall River, MA 02722-2140

Graphs of the Forgotten Kind, Part 2

by Robert F. Arnesen, P.E.

PART 1 COVERED THREE PROGRAMS for generating graphs. This article will cover the semi-log and log-log programs in some detail and will show you how to add the bells and whistles. You may be way ahead of me by this time, but I'll go ahead anyhow.

Figure 1 is the result of the program given in Listing 1. All of the extra routines are, as mentioned previously, placed just before the LOCATE command and the plotting equations follow the graph plotting routine, Xcycle.

To take the line plotting routines first, please note that the first thing done was to re-use some of the letters previously used to draw the graph because they are no longer needed at this point. The beginning of the plot is set at (A,B), the graph origin, and we're off and running. The plot is made up of line segments and you have to tell it where to start.

Since we're plotting over some number of cycles it's necessary to use the same type of routine that produced the graph. That's why the NextSegment and the ResetAgain routines are almost identical to those listed above them.

Note that the step 'N' starts at 0.2 and increments for each cycle. The calculations for each line segment take progressively longer times as the numbers increase in value. Increasing the value of the increment keeps it proportional to the cycle and greatly shortens the total plotting time while keeping the same detail. Change this value and see how this affects the quality and time of the plot.

Also note the use of the flag 'P' in the Lineplot section. This stops the plot at the end of a particular cycle. Should you decide to plot a different curve over another cycle or two and change the number of cycles accordingly, this plot will remain unchanged. Comment this line out by adding an apostrophe at the beginning of the line, add another cycle or two, and see what happens.

The X-axis numbers were put in on an empirical basis. I typed them in, ran the program to check their fit, and then re-typed them until they came out in the right places. Can this be done in any other way? Sure, but it's a terrible waste of time.

The Y-axis numbers are defined as a single digit followed by one decimal place and are written from the bottom of the graph to the top. When using LOCATE to place numbers or titles on the screen, you should bear in mind that the columns run from 1 to 77 from your left to right and that the rows are numbered from 1 to 23 starting at the top of the screen. Experiment with this routine by changing parts of it one at a time. Adding or deleting pound (#) signs will change the number of digits displayed.

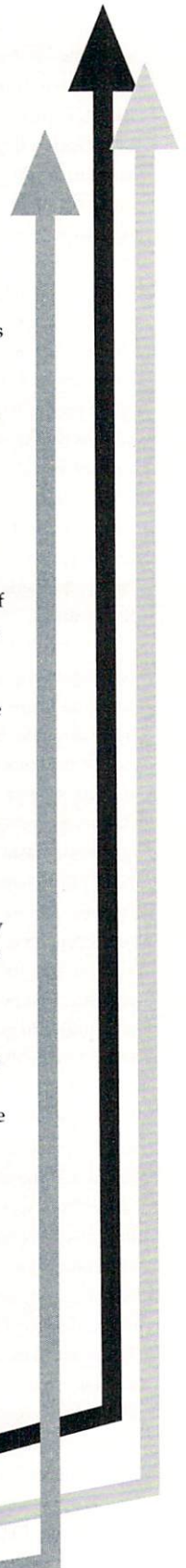
The axis origins and graph size can be easily adjusted to best fit your particular needs for numbers and titles. If you need more room for titles and/or bigger numbers, all you have to do is change a number or two in order to move or shrink the graph. Try it with this one and see how easy it is.

Listing 2 will produce the log-log graph shown in Figure 2 but with some differences. Figure 2 was turned out on a pen-plotter, which not only has lots more points per inch than a computer screen, but its aspect ratio is also different, so there was plenty of room to print the left and right side titles at the top of the page. Since the screen is more restricted, its titles, in this case at least, are best printed vertically on both sides.

The routines for doing this are shown under the 'Print the Titles' heading. The titles are equated to the string values A\$ and B\$. The LEN(A\$) call simply counts the number of characters and spaces that A\$ occupies and the FOR-NEXT loop runs from 1 to that number. The MID\$(A\$,K,1) looks complicated, but all it means is that the print routine goes through A\$ one letter at a time starting at the first letter—set by the initial value of K—and successively prints the title one letter at a time. If you simply type PRINT A\$ it will print the whole title horizontally.

The nice part about doing things that way is that you can change the titles any way you like without ever having to change the print routine. The Y-axis number in the LOCATE command is incremented by 1 each time a letter is printed, but the second value defining the vertical column in which the title appears is fixed. It's a technique for which you will find a lot of use. Change various parts of it so that you get a real feel for how it works.

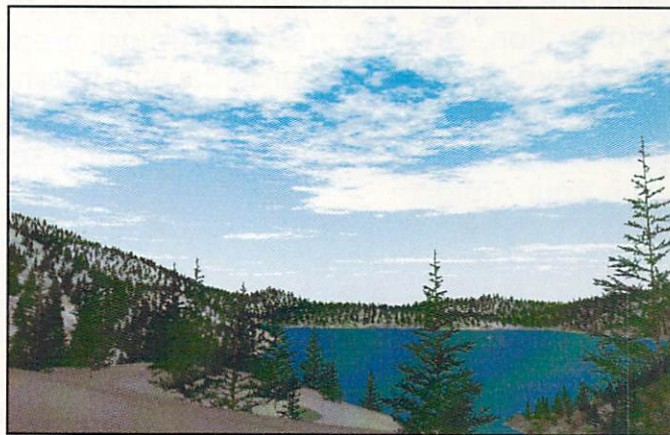
The line plotting equations for this type of graph differ from the other graph types covered in this article because log-log plots are usually straight lines. All that's needed is to calculate the two endpoints and draw a straight line between them. It



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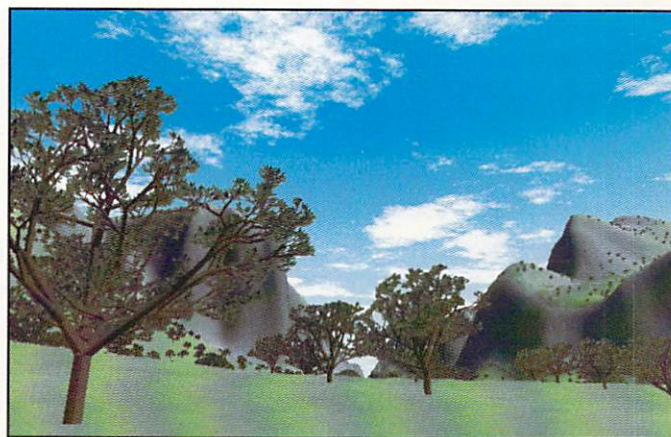
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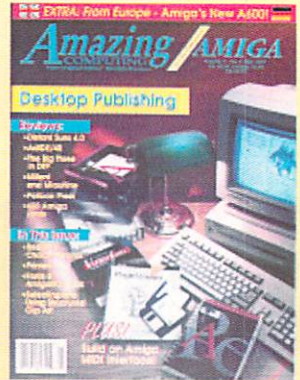
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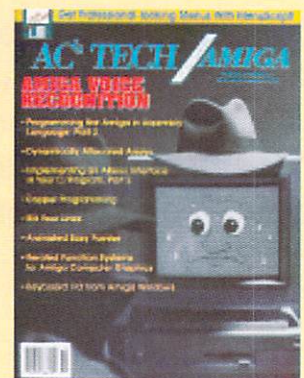
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FOUNDDEX

A look at Foundation demonstration stacks

by Dave Spittler

Nearly every authoring system which comes out these days has a calendar and a rolodex program among its demonstration stacks. Foundation is no different from the rest in this regard. Don't be too quick to roll your eyes in mock disgust and pass on to something more interesting, however. This rolodex program is a lot of fun to explore and there is a nifty surprise hiding in the calendar program.

Let's begin with *FoundDex*, the name and address program. You can get to FoundDex from the main Foundation screen by clicking on the "Open a Stack" icon. That will bring up a standard file requester, so all you have to do is locate FoundDex and double click on it. Another way to do it is to click once on the "Stacks" icon. That will take you to the control room screen which contains buttons for several demonstration stacks. Click once on the one labelled "FoundDex" and the program will come up.

You won't be able to see some of FoundDex's most interesting features without having some data in the fields, so let's type in some names and phone numbers as follows:

Fred Waters, Jones Co, 2112 N. A St, Louisville, Ky 40207 502-587-0999

Fred Bucket, Allen Co, 813 26th St, Louisville, KY 40208 502-445-2297

Tom Jackson, Randall Co, 81 Water St, Boston, Ky 40239 502-387-0998

Ann Apple, Water Co, 2112 Frankfort, Louisville, Ky 40207 502-587-4413

Art Allen, Randall Co, 22 N Front, Lexington, Ky 40514 606-233-8815

When you enter the information for Fred Bucket, enter this note: "Water boy for LA Rams."

The first thing that you will discover is that you can look up information in a number of different ways. You can navigate around by clicking on the "next" and "previous" buttons. A slightly more interesting way to move around is to use the "jump" feature. Press the right mouse button and select "jump" "frame" from the "Go" menu. (Before letting go of the mouse button, note that F4 is offered as a shortcut for this.) The program should have presented you with a requester with a list of frames in it. Double click on any frame number. If you happened to click on the frame number you are operating from, you will see no change at all. If you happened to click on any other frame, you will note that the FoundDex window did not change, but the information display did. You should have gotten Fred Waters if you clicked frame.1, Tom Jackson if you clicked on frame.2 and so on.

Now click on the "sort" button. When FoundDex has given you back the pointing finger icon, press F4 again. When the requester comes up now, the frames are scrambled. Frame.5 should now lead the list followed by frame.4, frame.2, frame.3 and frame.1. A jump to frame.1 will still take you to Fred Waters' information, even though that frame is now last on the list.

You are seeing something interesting in the way FoundDex works. The window and all of its buttons are in the background. That means that they always



FoundDex allows you to look up information a number of different ways.

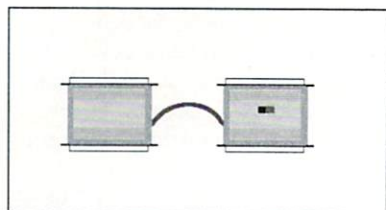
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Creating records in FoundDex is simple. The card and stack style allows you to go to other stacks easily to retrieve other information.

on the "edit" button and type in the note "call Ann Apple." Click on the "done" button and then double click on Ann's name. If you have done everything right, FoundDex should now come to the front with Ann's information displayed. If this were a real entry, and you have a modem attached to your computer, you would now be able to click the "dial voice" and FoundDex would proceed to dial Ann's number for you.

Leaving FoundDex active on the screen, press the right mouse button and select "Modify" from the "Edit" menu. The cursor will change from a pointing finger to a tiny cross hair. You can now get into the guts of FoundDex, the scripts. Press the right mouse button, go to the "Edit" menu and drop down to the "Scripts" sub-menu. There are several choices here including "Stack," "Backdrop," "Object," "Frame," and "Hypertext." Choose the "Backdrop" script and let go of the mouse button. The script editor will appear with the basic script for the backdrop, but in this case there is no script at all. In fact, there is a script for the main stack and there are associated object scripts. Everything which you have seen is accomplished through these scripts. The fact that they are so short speaks volumes about the power of the "FastTalk" language which drives Foundation.

There are two ways to find the meaning of the parts of the scripts which you cannot understand. The first way is to try to look them up in the manual. The second is to look them up online using either the "Encyclopedia" or "Hyperview" (the HELP stack). To do this, you will need to jump in and out of modify mode. This can be accomplished by pressing F2 to get into modify and F1 to return to browse.

See how long it takes you to figure out exactly what each of the scripts do. Sometimes one of the best ways to do this is to make temporary modifications to the script and see what they do. You can insure that the script changes are temporary by selecting "test"

when you exit from browse mode. If you are having trouble with the syntax when you are trying to change one of the scripts, try doing a dry run through use of the "chat" window. The chat window allows you to try almost any FastTalk command to see which way works best before you actually try to incorporate it into a script.

When you have wrung all of the information you can get out of the scripts associated with the FoundDex and Calendar programs, open up one of the other demonstration stacks and play with their scripts as well. This is probably one of the best ways to learn about the power and flexibility of Foundation.

•AC•



present—unless you are in the "note" section. Each record in our little data base, or each "card" in our rolodex, makes up one frame. This means that the stack adds a new frame every time you enter a new name.

Click on the "find" button, type in "Apple," and hit the return key. FoundDex should take you to Ann Apple's entry. That is pretty much what you might expect a find button to do. Now click on the find button once again and type in "water." When you click on the "OK" button (or hit return), FoundDex will bring up Fred Bucket, not Fred Waters. Do you remember typing in a note that Fred Bucket had been a water boy? When you ask FoundDex to find something, it is able to search in all of the fields and the notes section for the word, number or fragment of a word or number. To demonstrate this, click on the find button once more. The search string should still be "water". Click on "OK" without changing anything first. This time, Tom Jackson who lives on Water St. should come up. Another search will bring up Fred Waters, and so on.

Now, bring up the calendar program. In the current day, click

Please write to:

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bug bytes

by John Steiner

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product: *DeluxePaint IV*
re: bug fix
source: news release

Deluxe Paint IV has a new bug fix release. It's version 4.1, and the program adds a couple of new features, makes a few minor changes, and squashes several bugs. Major improvements include faster brush aliases, larger morph brushes, extended color selection, better overscan handling, hide anim while loading and several other features. If you purchased *DPaint IV* after January 1, 1992, call Electronic Arts for details on obtaining the upgrade free. The upgrade for other *DPaint IV* owners is \$7.50 and requires that you send your original disk to:

Electronic Arts
DPaint IV Upgrade
1450 Fashion Island Blvd
San Mateo, CA 94404
(800) 245-4525

product: A2091 Controller
re: inability to "talk" with HD
source: mail

A letter from Nicholas G. D. Old arrived describing a problem with an A2091 SCSI controller problem. Mr. Old purchased a G-Force 030 Combo with 4 MB of 32 bit RAM. The memory can be set up as either Auto-config memory or as Extended memory (outside the normal A2000 9 MB memory address space). "As long as the 32 bit RAM is set up as Auto-Config memory, everything works fine. But as soon as I set it up as extended memory, the operating system is unable to communicate with the hard disk on the A2091 card." GVP explained the problem occurs because the A2091 card only generates 24 bit addresses, and cannot find the drivers when they are loaded into extended memory. Mr. Old confirmed this explanation with his local Amiga service center, and both GVP and the service center informed him that the A2091 card could be modified for 32 bit addressing. I checked with my local service department, but they were unable to confirm or deny this as they had not run into the problem, and hadn't explored it.

Mr. Old also commented that both hard drives could be connected to the G-Force SCSI controller, but according to GVP tech support "...this might cause lockup problems since [he has] two Quantum drives." GVP is working on a ROM revision to

the SCSI controller to correct that problem.

product: *Professional Page 3.0*

re: AREXX error codes
source: mail

Don Ecsedy of West Mifflin, PA, writes about *Professional Page 3.0's* new function genies. He comments that the genies which have the capability to lay down simple bar charts on the fly are not working right. They both return AREXX error codes and cannot find a requested font. I confirmed the problem and Mr. Ecsedy's solution on my own copy of *PPage 3.0*. The two macros, *MakeBarChart_Horz* and *MakeBarChart_Vert* are easily fixed. Select one of the genies, and choose modify in the function genie requester. The macro will be loaded in the article editor. Use the "Search" function to find the word "SetFont". The line that will be found in both macros reads:

```
call  
ppm_SetFont('(CG)CGTimes')  
It can't find that typeface  
because (CG)Times isn't  
identified correctly. Remove the  
second occurrence of 'CG' so the  
line reads:
```

```
call  
ppm_SetFont('(CG)Times')  
Save the macro, not with the  
article editor's SAVE command,  
but by returning to the PPage  
screen with 'Right-Amiga /'.  
You don't need to change the  
genie's name, just click on OK,  
then you can select the genie  
from the genie function menu if  
you want to try it out. (You must  
have an available box on the  
page to use the macro.)
```

product: *WordPerfect 4.1.12*

re: Skip function
source: mail

Stan Skirvin of Scottsdale, AZ, writes regarding a couple of problems he encountered in *WordPerfect 4.1.12*. He comments:

"The spelling checker's 'Skip' now functions the same as 'Skip Once'. I use the checker quite often and the loss of the 'Skip in this document' capability is a major aggravation."

This is not a problem in my version 4.1.12, dated 1/15/91 on the help screen menu bar, (which I use to write "Bug Bytes" each month.) I just tried it on this document. Words with numbers in them are always flagged, however. For example, even if you choose Skip when it flags A2000, the checker will stop on every occurrence of A2000. This has always been the way WordPerfect handled words with numbers.

He also writes, "I have recently started using an elite type pitch (12 cpi) for my HP DeskJet printer. I find that WP 4.1.12 frequently cannot maintain the right margin when a line contains nontrivial underscoring or italics. I have seen lines that ran out so far to the right that they were truncated when printed. This does not happen with pica pitch (10 cpi)."

I don't have access to an HP DeskJet, so I could not verify this problem. If you have any workarounds or corrections for this, let me know, I'll pass it along.

product: *Home Front*
re: upgrade
source: news release

I received a notice from Designing Minds Software about an upgrade to *Home Front*, the home finance and management program. Version 2.0 features check and graph printing, automatic transactions and backups, and new graphic interface, and easy hard disk installation. Contact Designing Minds Software for upgrade information.

Designing Minds Software
3006 North Main
Logan, Utah

product: Art Department Professional
re: CLOSE GADGET and HAM8
source: CompuServe

I received a letter in CompuServe mail from a reader who has a couple of questions about Art Department Professional 2.0. He wondered if these problems were fixed in the 2.1 upgrade. I contacted ASDG, and they replied with answers to the questions. "When we try to convert a 24-bit file smaller than regular size (eg. 320 x 390) to HAM-E format, a strange result will occur. This is so because the picture can't touch the CLOSE GADGET of the window. There is no close gadget presented by ADPro when it is displaying a picture. Maybe he's referring to a display program."

I use ADPro regularly myself and can verify the lack of a close gadget.

The reader comments further, "There is no way to make HAM8 mode to work. It always gets some weird strips across the image when I convert from standard 24 bit picture." ASDG comments that this problem is solved in the manual. "It is stated in the manual that using the HAM8 mode for HAME requires that you specify no more than 60 colors. This is done using the CUST setting and specifying 60 colors used with a HAM8 setting on the color palette panel. The HAME cannot make use of the default 64 color registers used by HAM8 and thus will make streaks on its own if you try to use more than 60 registers. Ask your reader to contact us directly if more information is needed."

ASDG, Inc.
925 Stewart St.
Madison, WI 53713
(608) 273-6585

product: AmigaDOS 2.04
re: tips on selecting fonts
source: mail

Michael Safer of Albany, CA, sent along a couple of tips on using AmigaDOS 2.04. The Font Preferences program, located in the System2.0:Prefs drawer, allows you to change the basic fonts used for all screens and windows to replace the default Topaz 8 font. A problem could arise if you pick a font other than Topaz 8 and also reassign the location where the system looks for fonts. Most commonly this is done in the S/User-Startup or S/Startup-Sequence files with a statement like:

Assign fonts: work:fonts
If either startup file contains such a statement, the new font you pick as either the System Default Text font or the Screen Text font in the Font Preferences program must also be available in the System2.0:fonts directory. This does not apply to the font selected for Workbench Icon Text.

The reason for this requirement is that, when the system boots, the operating system needs to access the font it is supposed to use as soon as it starts putting text on the screen, which is before it reads your assign statement in either startup file. Therefore, the system looks for the font you selected in the default location, which is the font directory in the System2.0: partition. The problem is, when you picked fonts in the Font Preferences program, the operating system displays the contents of the directory you have assigned, not the default directory. The end result is that, if the selected font is in the assigned directory and not in the default directory, the system has allowed you to pick a font that it won't be able to find when it needs it.

If this happens, you will get the error message:

Intuition Prefs daemon
problem: bad sysfont.prefs file

The only choice you have is to click on the box labeled "Give up."

product: various
software support
re: consumer complaint
source: mail

Software support will make or break a vendor in the Amiga market. I've noticed that the last few months I've gotten more correspondence than I have in previous months from readers who are trying to contact a software developer and are being ignored, much less getting help for their problem. Sometimes the vendor will respond to me when I write or fax to learn why the customer isn't being supported; sometimes they don't respond. In many cases, the developer who provides little support is a parttime developer who wrote a program and is trying to make a buck marketing it, all the while holding down a regular job. These developers enter the market with the best of intentions, often expecting to make enough money to quit their regular jobs, and write Amiga software for a living. Unfortunately, it just doesn't always work out that way. A typical scenario goes as follows: The end user calls with a technical support problem and is greeted with a telephone answering machine, or a spouse who picks up the phone and says "Hello." A message is left, and the call is never returned.

Last month, I got two letters from readers who were having problems contacting technical support, and I faxed a letter to each company in question. I don't know much about either company, so I don't know whether they are part-time developers or multinational corporations; all I really know is that when the customer called, they didn't get the support they deserve. Layton Light of St. Louis, MO, wrote about Zardoz Software's *Image Finder* program, and he was not able to get them to return his call. To their credit, Zardoz replied quickly to me with a fax, telling me they had taken care of Mr. Light's problem, and apologizing for their delay in doing so. They provided a couple of reasons

why support wasn't provided to the user immediately, and promised those reasons wouldn't hamper their technical support in the future.

Barlow Soper of Ruston, LA, wrote to me about TTR Development's *Teacher's Toolkit*. He has been having problems getting the program to work with over 150 students, even though he was told when he purchased it that it would handle large classes. Even after a couple of bug fix upgrades, the program still doesn't handle large classes, according to Dr. Soper. TTR hasn't been very responsive in helping him solve his large class size problem, and has failed to return calls and failed to ship promised bug fixes. I faxed a letter to TTR Development asking them to present their side of the story, and comment on Dr. Soper's problem. That was over thirty days ago, and I still haven't received a reply.

I'm all for the entrepreneurial spirit, and as the owner of a small business, I know far better than most end users the problems of running a business, so I can say with authority, if you, Mr. or Ms. Developer cannot devote enough time and effort to your software project to provide the proper level of technical support, quit your day job.

That's all for this month. If you have any workarounds or bugs to report, or if you know of any upgrades to commercial software, you may notify me by writing to:

John Steiner
c/o Amazing Computing
Box 2140
Fall River, MA 02722
...or leave EMail to

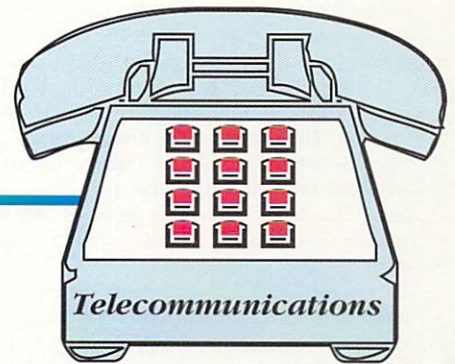
John Steiner on Portal
73075,1735 on CompuServe
Internet mail can be sent to
John_Steiner@cup.portal.com
FAX John Steiner at (701)280-0764

•AC•

Telecommunications

Making The World a Smaller Place

by Richard Mataka



Basic Terminology

To understand telecommunications, we need to define some basic terminology. When you talk on a phone with someone, your voice becomes an analog signal. The basic concept behind a telephone network is the transmission of analog signals from one destination to another. Computers are digital devices. The simplest definition of a digital device is that it has two states which are off and on. An analog can have many different states. Music or speech is analog which works from frequencies. There is an incompatibility between the telephone network and computers.

Modems were designed to make the telephone network and computers compatible. Modem is an acronym for MODulator - DEModulator. The basic function of a modem is to translate digital information into analog information and analog information into digital information. Now, by using a modem we can employ the telephone network to transmit information from one location to another location.

A term that often causes consternation to users new to telecommunications is BPS. BPS stands for "Bits Per Second." When you see a modem referred to as transmitting 2400 or 9600 BPS that means it is transmitting at a rate of 2400 or 9600 "Bits Per Second." However, that is not the number of characters being transmitted on a per second basis. There are 10 bits to a single character. For example, the letter "A" consists of 8 bits for the data plus something called a START Bit and an END bit. In reality, to transmit the letter "A" requires a full ten bits of information. If you divide the BPS speed by the bit length of the character you would find that for a 2400 BPS modem, only 240 characters are transmitted per second. A 9600 BPS modem transmits at 960 Characters Per Second. You will often find the Characters Per Second referred to as CPS.

Another term frequently encountered is the "AT Command Set Compatible." This means that the modem understands an industry standard "modem language." This "AT Command Set" language is used by a majority of the modems manufactured today. This is the standard command set included with every modem. Additionally, most of today's sophisticated modems also contain an "AT Command Set" extension. It's these command

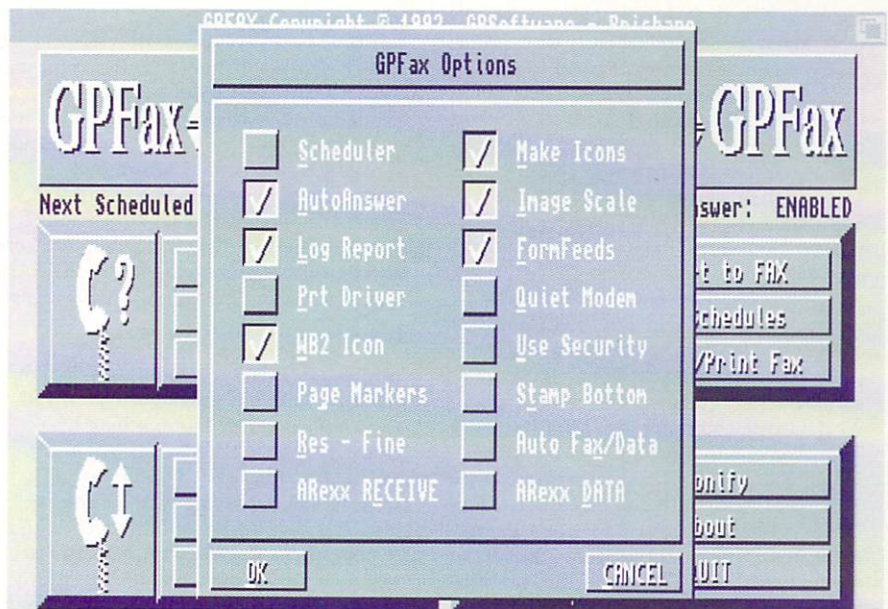
extensions that are created by each modem manufacturer which can cause confusion. However, the basic operation of almost all modems can be controlled through the "AT Standard Command Set." It is when you wish to enable a modem's special features that you will use the Command Set extensions.

Microcom Networking Protocol

MNP allows for error-free modem connections using sophisticated hardware design. This design can have been implemented to detect errors and correct them as they occur. It is accomplished by sending data enclosed in frames. These frames contain a header, the data, and a special frame check code. The check code is computed from the sending modem for each frame that it transmits.

The receiving modem performs the same calculation on the frame data and compares its result with that received from the transmitting modem. If the results are equal, then the frame was received correctly. If the check code results are not equal, the receiving mo-

This month,
AC takes
a look at
the world of
telecommunications,
focusing on
hardware,
software, and
on-line services.



GPFAX, a special telecommunications software package from Supra, offers many easy-to-use features including one which automatically creates a fax file ready for transmission from any word processing package.

dem requests that the transmitting modem resend the corrupted frame. At present, there are 5 levels of MNP support. The following are explanations of each of the MNP levels:

MNP Level 1 is referred to as block mode. This is a unidirectional mode of transmission. This transmitting modem sends a block of data and waits for a data acknowledgment before sending the next block of data. This level is not very efficient and is seldom used in computer to computer communications.

MNP Level 2 is known as the stream mode. It is a bidirectional mode of communications which means that data can pass in both directions simultaneously. However,

conditions are ideal and you combine the MNP Level 3, you see an additional throughput increase of about 5 percent. This means that for a 2400 baud modem that is using MNP Level 4 protocol, you would see an improvement in CPS throughput from 240 CPS to approximately 271 CPS. This transmission would also be error free.

MNP 5 is the next level to be defined. This is the level that invokes something known as data compression. This occurs at the sending modem before transmitting the data. The sending modem will detect redundant data (duplicate characters) and reencode it to fewer bits before transmitting it across the telephone line. The receiving modem recognizes

Modulation Standards

Now that we've looked at the Microcom Networking Protocol, we also need to take a quick glance at the physical modem standards which can also be called the Modulation Standards. Here again, acronyms are often used on packaging but seldom explained. The following are short explanations of the modulation techniques that you will often encounter when dealing with modems.

BELL STANDARDS

Bell 103 compatibility means that you are using a modulation technique that is good for connections from 0 to 300 BPS. This is a North American modulation standard.

Bell 212A is the 1200 BPS connection's standard for North America. This is the modulation standard for most 1200 BPS compatible modems.

CCITT STANDARDS

Next we have the CCITT standards for communications. CCITT is an acronym for the Consultative Committee for International Telephone and Telegraph. This committee is composed of manufacturers and companies from around the world. These manufacturers and companies meet from time to time to agree on world wide standards for telecommunications. The standards that affect modem communications worldwide are the v.22, v.32 and v.42. The following are short explanations of each of these international standards.

The v.22 standard is the CCITT standard used in Europe for 1200 BPS communication. Most modems can be configured to use the v.22 standard instead of the Bell 212A so that compatibility can be maintained with European modems.

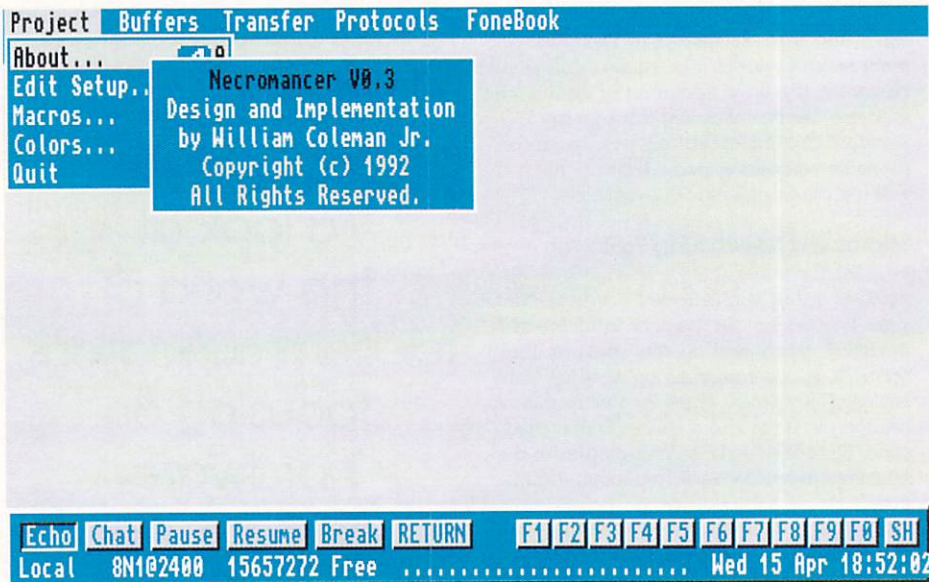
The v.22bis is the CCITT accepted standard in both North America and Europe for 2400 BPS communication. This is currently the worldwide standard for 2400 BPS communication.

The v.32 is the CCITT accepted standard in both North America and Europe for 4800 and 9600 BPS communication. As with the v.22 and v.22bis, this is the standard for communicating at these higher speeds.

The v.32bis is the newest CCITT standard to be released. Only a few modem manufacturers have released v.32bis compatible modems and we will look at two of them a bit later. The v.32bis is 100% compatible with the v.32 modems as well as all the other CCITT standards.

The v.42 CCITT standard is a hardware modem error correcting protocol. Technically, it is two error correcting protocols. There is the v.42/LAPM, which uses a 32-bit CRC (Cyclic Redundancy Check (Frame Check)) and is better at detecting and recovering from errors. However, it is a bit slower than the MNP 4 16-bit CRC error checking. As such, this v.42 also encompasses a 16-bit CRC check to speed up data transmission across the lines.

The v.42bis is the CCITT standard for data compression on a v.42/LAPM error correction connection. On normal text data, the



Necromancer is a relative newcomer to the telecommunications arena. This program offers basic communications from 300 to 9600. It is the simplest of all the programs to operate.

with this error correction there is also a protocol overhead. It is approximately 16 percent because the data is enclosed within framing information. This means that for a 2400 baud modem that is using MNP level 2 protocol, you would see a reduction in character per second (CPS) throughput from 240 CPS to approximately 202 CPS. However, this 202 CPS would be error free.

MNP Level 3 incorporates Level 2 but is more efficient. It achieves this efficiency by stripping the start and stop bits from each character in the data packet before it is transmitted. The receiving modem will then reinsert these start and stop bits before passing the data to the computer. This MNP level is an improvement in transmission of approximately 8% over MNP 2. This means that for a 2400 baud modem that is using only MNP Level 3 protocol you would see an improvement in CPS throughput from 240 CPS to approximately 259 CPS. Again, this transmission would be error free.

MNP Level 4 was created to reduce certain information in the frame header so that protocol overhead would be reduced. When

the MNP Level 5 and decompresses the data before passing it along to the computer. Theoretically, you should see an increase in throughput anywhere from 50 to 100%. However, throughput with MNP Level 5 is very sensitive to the data structure that is being transmitted. Files consisting of just text will produce the greatest throughput gains. However, files compressed with computer compression techniques such as ARC, LHZ, LHA, and ZOO will not see significant throughput increase.

The newest addition to the MNP family is MNP 10. This is a new protocol that automatically monitors the signal to noise ratio of the telephone line—like a cellular telephone connection. Based on that ratio, it will adapt the size of the MNP packet that is being transmitted. Additionally, this protocol will also negotiate the speed of the line so that a maximum line speed can be achieved over a telephone line of poor quality. Both the MNP packet size changes and speed changes are accomplished on a dynamic basis during the telecommunications call. This newest protocol has just been defined and has not been installed into any modems as of yet.

theoretical compression is 4 to 1 but like the MNP 5, it is sensitive to data content. However, unlike MNP 5, if the v.42bis senses that it has become counterproductive to the transmission, the modems will automatically temporarily disable the v.42bis data compression and transmit normally using whatever other CCITT or MNP standard that is currently in use.

All the CCITT standards are downward compatible. So, if you should see a modem that says that it is v.32bis compatible it will work with Bell 212A up to and including the v.32 standard modems. If the modem says that it is v.32/v.42bis compatible, you can use it to dial any type of modem from Bell 103 up to and including the v.32 standards. Depending on the configuration of the modems, they should automatically configure themselves to the proper Bell or CCITT standard as well as the correct MNP protocol.

Each modem manufacturer creates their own extended command set to support these standards and protocols. The command to set an extended option on one modem would be different on another modem. This can add confusion when upgrading or changing from modem to modem. However, once you learn the basics of one modem, you really know them all. The commands to perform a function may be different, but the result will be the same no matter which modem you may use. There may be times when you have to reference the manual for a specific feature, so it's always a good idea to keep the manual in an easily accessible location. Telecommunications can sometimes throw you some curves when you have difficulty connecting to a destination.

FAX Modems

FAX modems are the next big explosion that are coming to the Amiga marketplace. They have been available on the IBM computers for quite some time. IBM users have had the capability of sending and receiving FAX's from their computers. Amiga users need this capability.

There are standard modems that adhere to the standards that we have been discussed above. These modems have a special mode of operation for the FAX transmission. These are *not* standard modems, but special dual-purpose modems. You will see these modems advertised as 24/96 baud modems. This means that the data transmission rate of the modem is 2400 bps while the FAX transmission is 9600 bps with Group 3 FAX compatibility. Group 3 FAX machines comprise the largest number of FAX machines manufactured.

FAX has its own standards which are different from data modem standards. The CCITT FAX standards that all modem manufacturers must adhere to are the CCITT V.27, V.27ter and V.29. The CCITT T.4 defines the Group 3 FAX that you often will encounter when seeing advertising. This Group 3 is a fax image encoding method. As long as the receive FAX machine is Group 3 compatible and the send FAX modem is transmitting Group 3 data, they are compatible.

You can think of the Group 3 designation as a graphics file format. This Group 3 designator defines the graphics format of how the fax will be transmitted. Along with this designator you will also see Class 1 and Class 2 command sets discussed. These are special commands that are sent to the FAX modems (like the AT commands discussed above) that instruct the modem which operations to perform. Class 1 are the basic commands needed for a FAX transmission whereas Class 2 commands add additional features. The preference is to look for a FAX modem with Class 2, commands but this is not necessary as it depends on the type of FAX software being used

to interface to the FAX modem.

Looking at the latest standard we have V.33. This standard recently added the capability of using V.33 modulation at 12,000, 14,400 bps and V.17 modulation at 7,200, 9,600, 12,000 and 14,400 bps. This standard is what has been adopted by the modem manufacturers that are producing modems today.

Currently there is only one send and receive FAX modem that has been available in the Amiga market. This has been the ClickFAX product from Black Belt Systems. However, the competition is beginning to heat up with Supra releasing a 14,400 BPS dual-purpose modem with FAX software.



At Last! Peer to Peer Networking for the Amiga!

Interworks introduces its Ethernet-based Distributed File System, for the Amiga. ENLAN-DFS is an Ethernet based peer-to-peer LAN solution for the Amiga. You get powerful **disk, file and peripheral sharing** that until now was only available on other personal computers.

ENLAN-DFS is just right for connecting your workgroup of Amiga systems, whether it's two or twelve or more!

No dedicated server is required: any system can publish its resources and they immediately become available to the rest of the group.

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- Share your peripherals. That expensive laser printer can now be shared by everyone on the network
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ENLAN-DFS is a trademark of Interworks. Amiga is a registered trademark of Commodore Business Machines, Inc.

Dealer inquiries welcome

Circle 104 on Reader Service card.



Whap is a special software package for use on the Compuserve Network. This software will automatically log you on to Compuserve, download mail or allow you to set up files for auto downloading.

Telecommunications Programs

An often quoted saying is that, "Beauty is in the eye of the beholder." Telecommunications software can be likened to a beautiful work of art. What pleases one person another will find extremely annoying. Telecommunications software is a choice of personal taste. We are extremely fortunate in the Amiga industry to have a wide variety of Telecommunications software choices at our disposal. We are even luckier in that a majority of these offerings are Public Domain or Shareware. However, we cannot discount the commercial offerings as they are extremely competitive and provide excellent software. Let's look at some of the telecommunications software available on the Amiga and I will try to provide some insight into each program.

Commercial Telecommunications Software

MindLink Version 3.23

MindLink is the relative newcomer to the Amiga market. The latest version of this program was reviewed in the December 1991 issue of AC. MindLink allows modem communications from 300 baud to 9600 baud. This software package would need to be upgraded to use the newer 14,400 baud modems. While MindLink is somewhat skimpy on the downloading protocol support, its support should expand with time. While there is no ARexx support in the current version,

internal script language is provided. With this language, you can log onto systems and download mail or files automatically with no manual intervention. MindLink is an excellent program that will improve as newer versions are released in the future.

Baud Bandit Version 1.50

Baud Bandit by Progressive Peripherals and Software has been around for a number of years. This software is sophisticated in its support of protocols and options. It provides a smooth interface with ARexx and has provides a phonebook of unlimited size. ARexx scripts can be written to perform any tasks from within Baud Bandit from logging on to systems to a BBS system. Baud Bandit is one of the most popular commercial telecommunications programs currently available on the Amiga. In its current version, it can support any of the new modems being released.

ATALK 3 Version

Of the three commercial software packages, ATALK 3 appears to be the most complicated and sophisticated. It not only supports the standard protocols but also the new External Library protocols known as XPR. As with Baud Bandit, it already contains the built-in support for the new modem technology. If ATALK has a weakness it is in the number of Macro Keys that it supports. ATALK provides an ARexx interface with many examples provided on disk to guide the user in creating scripts. The manual for ATALK is very complete and provides definitions and discussions of the software options.

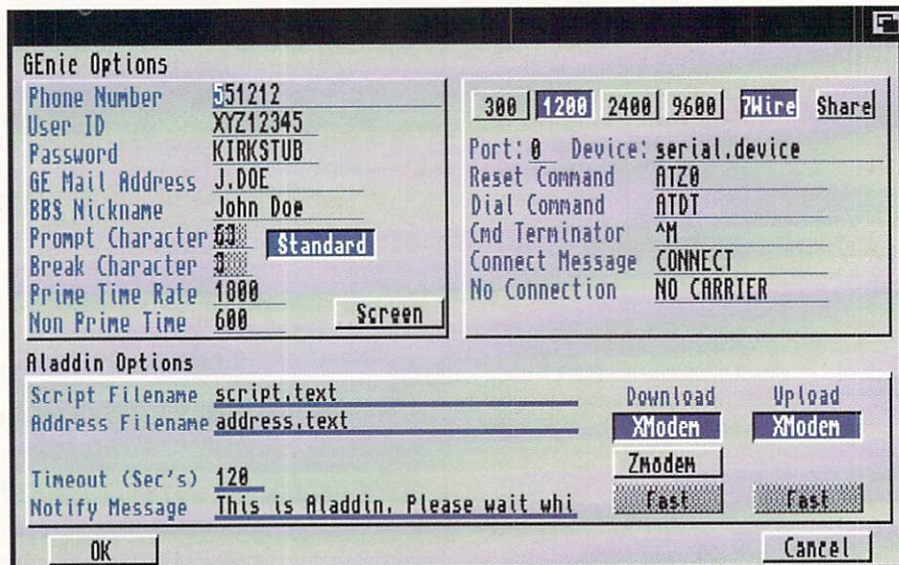
JR Comm Version 1.02a

JR Comm is one of the most popular telecommunications shareware programs available for the Amiga. Its success is mostly due to offering a powerful communications program at a reasonable shareware cost. While the current version does not support ARexx, this is something that we may see in a later version. Jack Radigan, author of JR Comm, updates the software on a regular basis. JR Comm protocol support is adequate in that it supplies all the necessary protocols internal to the program. There is no XPR support. This telecommunications software is relatively simple to use and is sophisticated enough to access any type of host system. JR Comm is an excellent shareware product that deserves a serious look for those beginning in telecommunications.

HandShake Version 2.20

HandShake is a VT52/100/102/220 terminal emulator software package written by Eric Haberfelner. This is a shareware software package that contains all the useful features necessary in an Amiga communications program. The standard protocol support as well as the XPR protocols are included in this program. Additionally, there is an ARexx interface included with HandShake that can be used to create custom scripts for logging onto Bulletin Board Systems. HandShake also

Right: Aladin, for use on Genie, also functions as a combined automated log-on and downloading software and a terminal software program. Aladin allows users to access the various areas of Genie simply by selecting them from menus.



provides the standard DEC VT technology of smooth or jump scrolling and the full VT100 graphics support. HandShake is a basic telecommunications program that contains all the features necessary to get you up and communicating quickly.

BackTalk Version 1.51

BackTalk is a copyrighted Public Domain general purpose TTY type telecommunications software program for the Amiga computers. This software offers full ARexx support and an unlimited Phonebook for dialing Bulletin Board Systems. Additionally, BackTalk also supports the XPR protocol format which means that all protocols are external. BackTalk is a versatile program that offers the user all the basic telecommunications options necessary to be up and running quickly. With the ARexx support, BackTalk can run or be run from external programs.

TERM Version 2.03

Term Version 2.03 is a GiftWare telecommunications release from Olaf 'Olsen' Barthel who is from Germany. GiftWare is a relatively new concept that states that if you use the program you should have the honesty to send the creator a gift of some sort, money or whatever you deem equitable. Term supports the XPR method of protocols. As with the other software programs, it offers all the features that will allow you to be communicating quickly.

VLT Version 5.517

VLT is a terminal emulation program from W. G. J. Langefeld and is a VT100 or Tectronix emulator. It is a program that offers

and COMM supports only up to 9600 baud. Besides this, both programs are similar in operation and support only "X" and "Z" protocols for uploading and downloading. Each program is straightforward and Free Public Domain. With either program, you will be able to communicate in little or no time at all once you become accustomed to the programs' interface. Neither program supports ARexx.

WHAP and ALADIN

Whap is communications software for use on the CompuServe Network. This software will automatically log in to CompuServe, download mail, or allow you to set up files for auto-downloading. The current version of WHAP, 1.9, operates well at speeds up to 2400 baud. I have experienced decreased throughput at the higher 9600 baud speed to transmission errors caused by the program. The program authors are constantly upgrading their efforts and this problem should be overcome shortly.

What WHAP is to CompuServe, ALADIN is to GENie. Aladin also functions as a combined automated log on and downloading software and a terminal software program. Aladin allows users to access the various areas of GENie simply by selecting them from menus. Users can easily join or delete conferences using Aladin. Conferences are where people meet to discuss technical issues or to ask questions about products or services.

Both CompuServe and GENie are supported by a large number of Amiga vendors. Often special events are run on scheduled evenings with vendor participation. These

There is a wide variety of commercial and public domain telecommunication programs available for the Amiga.

full ARexx support with XPR protocol support. VLT is a shareware support program. As with the other programs we have looked at, it is full featured and offers another simulator for communications.

Necromancer Version .3

Necromancer is a relative newcomer to the telecommunications arena. This program offers basic communications from 300 to 9600. It is the simplest of all the programs to operate and is quite stable. Perspective users should be able to be up and running with little problems as the program interface is straightforward. Simple and clean is Necromancer's current style. Necromancer will only support up to 9600 baud modems, which means that the newer modems would need another comm program.

AZCOMM and COMM Version 1.34

These two programs started from the same basic code. The major difference between these software programs is that AZCOMM will support up to 19,200 baud

gatherings can provide users with the latest breaking information in the Amiga market.

As mentioned earlier, individual taste is most important when considering a telecommunication program. Baud Bandit and ATALK are both superb commercial products that cannot be overlooked. However, often when a person is beginning to become involved in telecommunications, they will acquire a Public Domain or Shareware software program to gain experience. Once the experience is gained, I would recommend acquiring either a Shareware program such as JR Comm or invest in one of the commercial products. The reason for this is that you will want the continuing support which will be provided by a shareware or commercial product. When your experience in telecommunications grows, so will your usage of the telecommunications programs. You will find yourself writing scripts to automatically log onto systems, get mail and browse your favorite areas unattended. All of this and more is possible and all it takes is time and experience. Table 1 shows all the telecommunica-

CATV Operators Hotel Managers Video Producers Corporate PR Mgrs.

If you're responsible for programming text screens, digitized images or animations over a cable channel or closed-circuit message system, you'll want to look into **Prolmage** (pro-image), a presentation software program that:

- Is Menu Driven
- Displays High-Res IFF Images and Anim-5 Animation Files
- Controls Date/Time Sequencing via Easy-to-Write Scripts
- Updates by Phone, w/o taking System Off-Line
- Controls* Remote VCRs, CD Players, Video/Audio Switchers
- Provides On-Line Status from Remote Presentation Computer
- Provides Command-Line Control of Remote Computer

* Serial Controllable Devices

Our specialty is developing systems to meet your communication needs. Let us demonstrate **Prolmage** to you.

Communication Systems Engineering

4 Todd Road, Nashua, NH 03060
Tel: (603) 883-0223 Fax: (603) 883-3910

Circle 119 on Reader Service card.

tions programs that have been examined and compares their basic operations. From this table you can gain a quick idea of which program will suit your needs.

Cost Justification

One of the biggest problems that are often encountered is the price differences between the high speed and low speed modems. In today's market, the cost of a low speed modem is often less than \$150. However, the cost of 9600 bps and up can be between \$400 and \$600. As you can see the cost of a high speed modem is three times more expensive than the low speed modems. At first glance you may say that the cost does not justify the additional speed. Well, before you go jumping to conclusions you need to understand the cost vs data transmission ratio.

Going back to basic telecommunications, you will find that the transmission rate of a standard 2400 baud modem will allow a ZMODEM file transfer of approximately 225 characters per second. However, a 9600 baud transfer of the same file could increase to over 1000 characters per second. This is an increase in cps throughput of 400 percent. However, if we begin to look at the newer 14,400 bps modems, we really see an improvement to over 1500 characters per second which is an incredible throughput for telecommunications technology. Now, depending on where the system is you are accessing will determine whether you can justify the higher

Program	Protocols	AREXX Port	Phonebook Size	Baud Rate Range	# of Macro Keys
MindLink 3.23	X, Y, Z, CHAT M	**	40	300-MIDI	20
Baud Bandit 1.51	X, WX, Y, YB, Z, B+	YES	UNLIMITED	300-38,400	30
A-TALK 3 1.3e	X, XPR, WX, Y, YB, Z, K	YES	60	300-57,600	20
JR COMM 1.02a	X, WX, Y, Z, B+	NO	9,999	300-57,600	40
HandShake 2.20	X, Y, YB, K, XPR	YES	20	300-19,200	6
BackTalk 1.51	XPR	YES	UNLIMITED	300-38,400	20 per telephone entry
Term 2.03	XPR	NO	UNLIMITED	110-115,200	40
VLT 5.517	X, K, XPR	YES	UNLIMITED	110-57,600	40 per telephone entry
Necromancer .3	XPR	NO	UNLIMITED	300-9600	20
NCOMM	X, G&R, Z, K, XPR	**	UNLIMITED	300-115,200	20 per script
AZCOMM	X, Z	NO	44	300-19,200	20
COMM	X, WX	NO	44	300-9,600	20
WHAP for CIS	B+	NO	3	300-9,600	N/A
ALADIN for Genie	X, Z	User Scripts	-	300-9600	N/A

** = Internal Script Software CIS - CompuServe Information Service Genie - GE Information Service

TABLE 1

speeds. If you are connecting only to systems that are local to your area and don't care how long your telephone stays busy, then 2400 baud modems may be your answer. However, if you are accessing commercial systems such as BIX, CompuServe or GENie for downloading of files, higher speed modems can offer real financial savings. While the commercial networks do not yet support the 14,400 modems it is only a matter of time before this occurs. Also, if you are dialing long distance, these high speed modems can also offer real financial savings.

Looking at Table 2 (Page 46) you can see a chart that will show you the financial savings and character transmission times. As you can see from this chart there is a great amount of savings when transferring data on the CompuServe commercial service or when dialing long distance. GENie, because of the way in which their prices are structured does not offer that great a savings. If we look at CompuServe and the long distance savings, it

is safe to say that using a high speed modem for 60 to 70 hours of data transmission the modem would pay for its use as cost savings. This is because we are transferring data at 9600 baud which is approximately 4 times faster than the lower 2400 baud modems.

Your throughput using a 14,400 modem for text data using MNP 4 and MNP 5 (error correction and data compression) could be as high as 56,000 characters per second. If we look at the transmission of file that has been previously compressed, we should see a character per second of 1530 which is a considerable increase from that received at 9600 bps. As the commercial services begin supporting these higher baud speeds we should begin seeing a decrease in our billing as information will be flowing faster down the same telephone lines that are in use today with the slower speed modems.

If we look at the U.S. mail, we can see that it is cheaper and faster to transmit files electronically than use the postal services next

day airmail. Typically, when sending important information it is done using the next day services that are available from Federal Express, UPS, or the Post Office. The price for this service is around \$10.00. However, if we were to dial up the destination computer directly, transmitting the information over the telephone network at 9600 baud, the cost would only be \$4.48 and it would only take about 18 minutes for the information to arrive. This is a savings in both time and money for everyone concerned.

This is the method in which long documents can be sent. This is the future as we see it today. For just one- or two-page documents, there is FAX. This technology is more than sufficient to take care of these types of documents. It is often preferable to FAX a short document or letter than mail the letter. Sending FAX's from depots typically will cost around \$3.00 per page. If you send FAX's frequently, it may be more cost effective to invest in a FAX machine for your business or

office and use your Amiga for all your telecommunications purposes.

MODEMS

Modems, who's who, and what's what in this industry can often lead to additional confusion while you are shopping. Which is best? Well, there is no single answer for this simple question. What one person may feel is their optimum choice may not be that of another. All you can do is to look at the features offered by each modem and make your purchasing decision on the features which you feel you need. However, you can rest easily knowing that because of the CCITT and MNP standards that the modem manufacturers must adhere to all of today's modems can talk with one another with no problems whatsoever.

The next area that will be examined is some of the more popular modems that are available today. We will begin with the tour with the premier ClickFAX product from BlackBelt Systems which is the most mature FAX/modem product available for the Amiga today. We will then look at the Practical Peripherals Practical Modem 9600SA, their latest 14,400 bps FAX/modem and finally the SupraFAXmodem. I can state right now that each of these products are of high quality and all can be used equally well with any Amiga from the 500 up through the 3000. Which one you should choose depends on your personal preferences but all are SERIOUS contenders.

ClickFAX by BlackBelt Systems

In the past, ClickFAX has received some bad publicity which I feel is totally undeserved. We are dealing here with a sophisticated piece of software that with the FAX modem combination provides a unique Amiga product. While the modem may not be up to the fastest data transmission standard available on the market today, the software is simple to use and provides reliable FAX transmissions.

In the data communications mode, the modem can be used with any of the programs that were briefly looked at above. Each of these programs communicate with the modem flawlessly. The modem can employ the MNP Classes 2, 3, 4, and 5. The MNP 5 will be the most used method as it allows data compression which speeds up the transmission of normal text data. However, remember that data that has been previously compressed with an "arc'ing" program of some type will only transmit at approximately 230 characters per second. This is a standard 2400 bps modem in the standard telecommunications mode. While this is slow when compared to the other data modems, it is this device's strength as a FAX device where ClickFAX unit excels.

The entire ClickFAX package as it is delivered today consists of two programs. The first program is called their "Cover Sheet Generator." This program is used to create a cover sheet form and IFF formatted screen. For example, using PageStream, I was able to create a specialized cover sheet and then print the output to an IFF file as PageStream has an

IFF printer device. Once this was accomplished I was then able to assign fields to this FAX cover sheet for the ARExx program that is run to fill in the cover sheet blanks. At any time during this process you can create the document that needs to be FAXed. This document, which can be any number of pages, can be created with any type of text editor or word processor. The only requirement is that the final file format be a straight ASCII text. All text editors and word processors have this ability. Ed or MEMACS from WorkBench or ProWrite and WordPerfect have the ability of saving text files in the format necessary to be converted to the G3 FAX format.

After you have created your cover sheet using the Cover Sheet Generator program, it is time to execute the main ClickFAX software. Depending on the function that you wish to perform at the time will determine which option is chosen. At this point in the article we must make some general assumptions that I have previously configured ClickFAX and set up the Phone Book which contain the names and numbers of our FAX recipients. Since we have already created the files that we are going to send, it is now time to convert them to the G3 FAX format. This is done by selecting the "Convert" button with the mouse pointer.

The next step is match up the document that has just been converted with the phone number of the individual to who the document is to be sent. This is accomplished by selecting the "SEND" button on the ClickFAX main screen. Again, requesters are provided asking you for the document name that you wish to send and then to select the person or persons FAX number to whom you will transmit the FAX. This is all done by using the mouse and selecting the various gadgets that appear on your screen. Once we have selected the proper requesters for the Document, and the number to dial we would select the "Do It" gadget. Once ClickFAX has completed the transmission, you will see the "Status" screen. This is the final indication that everything has been completed properly.

Once you have completed transmitting the FAX, you can place the ClickFAX software to work in the background monitoring your telephone line for incoming FAX calls. This allows your Amiga to operate as a true FAX machine sending and receiving FAX's.

If you are not expecting to send or receive a FAX, your ClickFAX modem doubles as a regular 2400 bps modem. You can use any of the Telecommunications programs that were discussed previously in the article as they all operate with this modem. You must realize that the maximum speed of your modem in this mode will be 2400 bps which is more than sufficient if your data telecommunications is low. If this is the case, the ClickFAX products may be just what is needed as with the combination of hardware and the easy to use sophisticated software makes ClickFAX simple to operate and a very effective FAX device.

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Practical Peripherals 9600SA and 14400FXSA V.32bis

We will only look at the 14400FXSA v.32bis modem, as the 9600SA operates in the same manner except it has no FAX capabilities and its maximum speed is 9600 bps. I have used the 9600SA modem for over a year and can attest to its quality and reliability. Practical Peripherals has now improved upon their reliable 9600SA with the release of their 14400FXSA V.32bis modem.

The maximum speed that this modem can support using the MNP 5 data compression is 57,600 bps. This speed would be achieved through the transmission of straight text data and not data that was previously compressed. All the telecommunications software that we have looked at above work perfectly with this modem. The transmission speed of the software should determine which modem program could be used with this modem. If you look at the baud rate range of Necromancer, you would see that its maximum speed is 9600 and you could never take advantage of the 14400 bps speed of the modem. However, most of the other telecommunications software programs do support the higher baud rates which means this modem could work with any of these packages.

The manual supplied with the 14400FXSA modem is thorough and complete. It provides you with definitions of all the commands that you can give the modem. The manual also provides you with an excellent section titled Basic Modem Operation. This section provides you with some of the information that you will need to use your new modem if this is new to you. This information is pertinent no matter which type of computer you are using as it offers sound advice on telecommunications.

While the 14400FXSA is a combination data and FAX modem there is no Amiga specific software included. The software that is included is for the IBM PC and it is FAX

software. If you are using the ATONCE or ATONCE+ there is no reason you cannot use this software to send and receive FAX's when in IBM mode. However, there is not any commercially available Amiga FAX software as of today. There is a shareware FAX program available from Australia that may be configured to work with this modem. I have looked at this software and was not able to configure the software to work during the limited amount of time available to write this article. However, I see no reason, with some assistance from the program authors, that you couldn't get the software to work in FAX mode with the 14400FXSA modem.

One item you should note about Practical Peripherals is their service organization. From time to time new ROMs (Read Only Memories) are released for the Practical Peripheral modems. Their service organization is set up to send out new upgrades free of charge. All they ask in return is that you mail back to them the old ROM which can then be re-used. This is the only company that I am aware of who offers this type of service. I have used this and upgraded my 9600SA modem to the latest software revision at the cost of a telephone call and return mail of the ROM. This is an excellent feature as it provides you with all modem software improvements at no extra charge which is a fantastic deal for the end user. Personally, I just wish that their support of the Amiga market was a bit stronger as all their modem products are excellent pieces of hardware that work well with the Amiga.

SupraFAXmodem v.32bis

As with the Practical Peripherals modem, the SupraFAXmodem is a dual-purpose FAX and data communications modem. The maximum speed of the data and FAX communications is 14,400 bps. The technical specifications of the SupraFAXmodem and the Practical Peripherals 14400FXSA are simi-

lar. The largest difference between the two devices is their physical size. The SupraFAXmodem is much smaller than its counterpart. However, the Practical Peripherals modem does have a larger space on its front panel where error and progress messages can be examined. Functionally, the major difference between the two modems is that the SupraFAXmodem supports the Class 1 and 2 FAX commands and the Practical Peripherals 14400FXSA modem supports only the lower level Class 1 FAX commands.

Supra has been a supporter of the Amiga market for quite some time and has released many Amiga products. While their SupraFAXmodem can be used by any computer, Supra has recognized that there is limited FAX support in the Amiga market. To fill this void Supra is releasing a separate software package for their SupraFAXmodem which will be called GPFAX. This software is from Australia and works perfectly with the SupraFAXmodem.

GPFAX

I have been using a BETA version of the GPFAX software for approximately 1 week and its operation has been smooth and reliable. I should state from the start that this software operates equally well under AmigaDOS 1.3 or 2.04 and is PAL and NTSC compatible. The only minor difference under the AmigaDOS operating systems is the Iconify option which is not available under AmigaDOS 1.3.

The first steps that you need to perform when setting up the software is to setup your Environment and your Options. The Environment is where you place all the personal information regarding your FAX machine or software. For example, it is here where you would place your Company Name, Telephone number, etc. Many of the Options are self explanatory. However, other Options may not be so clear. "Prt Driver" is one of the

TABLE 2

Service	File Size	Price per hour	Speed	CPS	Time in Minutes	Cost	Savings
Compuserve	1 meg	\$12.80	2400	230	1 hr 12 min	\$15.46	
	1 Meg	\$22.80	9600	930	18 Min	\$6.81	\$8.65
Genie	1 Meg	\$6.00	2400	230	1 hr 12 min	\$7.25	
	1 Meg	\$18.00	9600	930	18 Min	\$5.38	\$1.87
Long Distance Telephone	1 Meg	\$15.00	2400	230	1 hr 12 min	\$18.12	
	1 Meg	\$15.00	9600	930	18 Min	\$4.48	\$13.64
	1 Meg	\$15.00	14400	1530	11 Min	\$2.72	\$15.39

Note: Rates may have changed however, savings would be apparent at higher speeds.

Options that is extremely easy to use but it may not be apparent as to what it is to be used for. Well, simply speaking, the PRT Driver replaces your currently selected Preferences Driver and replaces it with the GPFAX Driver. This means that when you go to print out a document from whatever word processing software that you want to use that instead of printing to your printer, the output creates a FAX file that is ready for transmission. This is a real time saver when you are creating a document that needs to be FAXed.

Another Option that is not so clear is "Use Security." As FAX machines are becoming more prolific in the business world, there is now a junk FAX campaign that is occurring. This is the same thing as junk mail except that companies get your FAX number and send the junk to your FAX machine. While this is not yet rampant, it is something that will occur more often in the future. The "Use Security" is the method that is used to get around this junk FAX. What occurs is that when a FAX call is received, one of the first functions that the originating FAX performs is to send out its originating telephone number. Well, if this telephone number is not in your Phone Book the GPFAX software will refuse to accept the FAX call. However, if there is a match with the GPFAX Phone Book everything progresses normally and the FAX is received.

The final Option that we'll briefly discuss is the ARexx area. There are over 30 ARexx commands supported in GPFAX. GPFAX can be run entirely through an ARexx script. For example, it is possible through the GPFAX ARexx port to start the program, look for incoming FAXes and print out the FAXes to your printer as they are received. Through ARexx you can send multiple FAXes to multiple groups of people as you wish. All of this can be done through the powerful ARexx interface port that resides within GPFAX.

However, most of us will use GPFAX in its interactive mode of operation. As mentioned above, "Prt Driver" Option set we can print a FAX formatted file directly from our word processing program. Once this has been accomplished it is time to send our formatted FAX. When the FAX has completed sending, our "Reports" file would be updated with the status of the FAX transmission or reception. It is a good practice to View your "Reports" regularly so you can keep track of the FAXes that have been sent and received.

Supra also has a method of sending updated modem ROMs to their registered users. When they find an error you can expect an envelope in the mail with detailed instructions on installing your new ROM into your Supra modem. If you feel uncomfortable performing the task, you can call Supra's help line or send your modem back to Supra and for a small shipping and handling fee they will upgrade the modem for you. As with their counterparts, Supra plans on constantly

improving their products, taking advantage of new standards as they are agreed upon by the CCITT. With their ROM upgrade policy, you can be sure that you will always be at the forefront of telecommunications technology, receiving updates as necessary.

Additionally, while I have only looked at Supra's 14400 modem they also have other modem products that may fill your need. The same is true of Practical Peripherals. Be a wise consumer and shop with understanding, knowing what you want and knowing what your needs will be.

Supra has advised that it will be releasing the GPFAX software FAX modems manufacturers by other companies. So if you have already purchased another modem, but it is

The basic function
of a modem
is to translate
digital information into
analog information and
vice versa.

FAX compatible, you should contact Supra and check for the availability of the GPFAX software for your modem.

Configurations

The data configuration of a new modem is really a method of trial and error. You may well find that one configuration that works well with one system that you dial is not efficient with another system that you access. Also, when switching from one modem to another there is a great deal of experimenting that you must go through to properly configure your modem. Remember, that just because modems follow MNP and CCITT standards they all have extended command modes and that is where the fine tuning must take place. Trial and error is what you will need to do to fine tune your modem however, if you keep track of the steps you are performing, there is no doubt that even a novice can configure a modem for maximum transmission throughput.

Summary

A great deal of material and information has been covered in this article. Telecommunications is a complex subject as you now know. What's best for you depends on your requirements. For example, if all you need is a FAX modem, the ClickFAX from BlackBelt Systems is an excellent choice. The software is easy to learn and simple to use. In the months in which it has been in use it has functioned flawlessly.

If your needs are only Data communications and you have no need for Amiga FAX then either the Practical Peripheral 14400FXSA v.32bis or the SupraFAXmodem v.32bis are excellent choices. I have heard of users purchasing these modems just to play games. Can you imagine playing Fighter Duel or Falcon head to head with an opponent through modem at these high speeds. It will seem as though they are sitting at a computer in the next room and your systems are connected by a local cable. As new games are released with modem capabilities, the practicality of modem gaming or telecommunications gaming will grow. Your opponents can now be located anywhere in the world and you can have an exciting head to head game.

Finally, if your needs are a combination of FAX and Data communication your current choice must be the SupraFAXmodem v.32bis. This modem, with the bundled FAX software, offers you the best of both worlds. You can work with the excellent GPFAX software for your FAXes and have the latest in telecommunications technology at your finger tips.

As with most technologies, there is no one single best. There is no one single choice. What is best for you depends on your situation and your requirements. As I stated early in the article, "beauty is in the eye of the beholder," and this is especially true in the telecommunications field. There is no one simple answer as you can see. What you have are many standards and extensions. What you need to decide is what is best for you. This is true not only in the modem hardware but also in the telecommunications software. There is no one far and above all the rest. What you have are standards and now that you understand what some of these standards are you can make intelligent purchases based on requirements and not what a salesman or an advertisement advises.

•AC•

Please Write to:

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c/o Amazing Computing
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For a complete rundown of some of the top modems available for the Amiga, turn to page 48.



Baud Bandit 2400

Progressive Peripherals

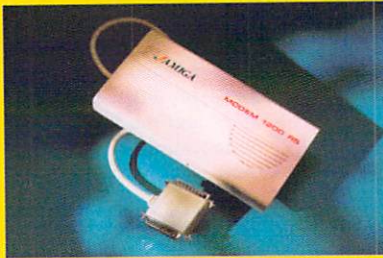
RS232-compatible interface
Asynchronous operation at 300, 600, 1200, and 2400bps
Compatible with Bell 103/212A, CCITT V.21, CCITT V.22, and CCITT V.22bis protocols
Auto-answer, auto-dial
Built-in memory stores user configuration and telephone numbers



Baud Bandit MNP/Level 5 Plus

Progressive Peripherals

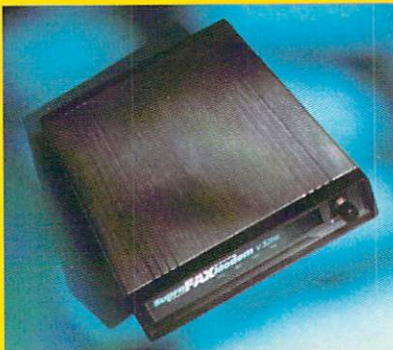
RS232-compatible interface
100% error-free transmission
Compatible with standard AT comand set
Extended Level 5 Plus command set
Synchronous/Asynchronous operation at 300, 1200, and 2400bps
Compatible with Bell 103/212A, CCITT V.22, and CCITT V22bis protocols
Auto-answer, auto-dial
Built-in memory stores user configuration and telephone numbers
Supports data input up to 9600 baud



1680 Amiga Modem 1200/RS

Commodore Business Machines

RS232-compatible interface
Utilization of the Hayes AT command set
Full or half duplex operation
Built-in speaker
Terminal software package for the Amiga
Communications package which enables you to mate your 1680 with an IBM PC or Commodore PC 10 or PC 20 computer as well as other IBM compatible computers.
1200 or 300 baud
Auto-answer, auto-dial, auto-speed, and auto-mode selection



SupraFaxModem V.32bis

Supra Corporation

FAX

14,400/12,000/9600/7200/4800/2400 bps
Class 1 & 2 commands
Compatible with Group 3 fax machines
V.17, V.29, V.27ter

DATA

14,400/12,000/9600/7200/4800/2400/1200/300 bps data
Up to 38,400 bps throughput with V42bis data compression
Bell 103/212A, CCITT V.21/V.22/V.22bis/V.23/V.32/V.32bis/V.42/V.42bis, & MNP 2-5
100% comaptible with standard AT commands and result codes
Extended AT commands
Nonvolatile memory stores 2 user configurations and 4 telephone numbers
Auto-answer, auto-dial

Amiga Modem Rundown

The modems and corresponding software available for the Amiga make it possible for the Amiga user to reach out to every corner of the world. Now you can take your Amiga to new heights by joining the world of telecommunications.

SupraModem 2400zi Plus

Supra Corporation

2400/1200/300 bps

MNP 2-5 & V.42bis error correction & data compression for up to

9600 bps throughput with a V.42bis modem

Bell 103/212A & CCITT V.21/V.22/V.22bis/V.42/V.42bis

100% compatible with AT commands & result codes

Extended AT command set

Nonvolatile memory stores 2 user configurations and 4 telephone numbers

Auto-answer, auto-dial

(Internal shown, external available)



Abaton InterFAX (For Black Bell's ClickFax)

Asynchronous CCITT V.22bis/V.21, Bell 103/212A

Compatible with AT command set

Smartmodem in ASYNC operation

Group 3 FAX machines

RS-232-compatible interface

Originate, Answer, Auto-Answer Full or Half Duplex

Guard Tones (CCITT)

550 hz

1800 hz



Practical Modem 14400FXSA V.32bis

Practical Peripherals

Compatible with Hayes Ultra 144, Ultra and Optima

V.32bis at 14400, 12000, 9600, 7200 bps using TCM (Trellis Code

Modulation) V.32 TCM 9600 bps/ V.32 at 9600 & 4800 bps/V.22bis/

V.22, Bell 212A/103/V.21

Supports v.42 error detection/correction

Supports MNP levels 2-5, MNP4 error correction, MNP5 data compression V.54

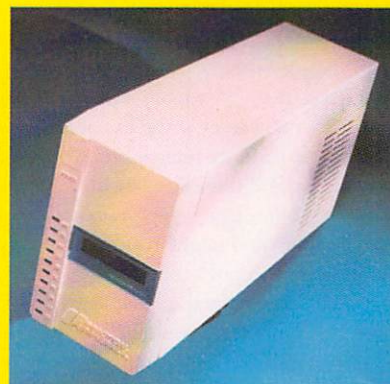
Nonvolatile memory stores 4 telephone numbers.

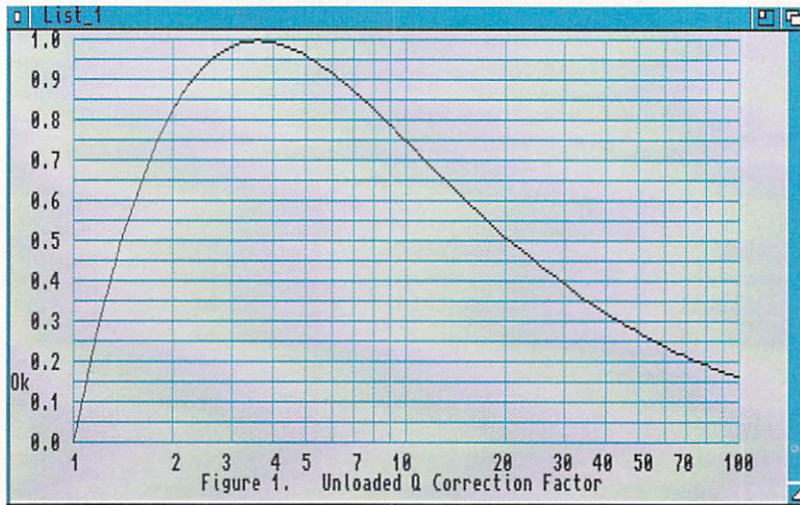
FAX

Compatible with Class 1 PC FAX Software

V.29 Group 3 at 9600, 7200 4800 bps

V.27 Group 3 at 4800, 2400 bps





The axis origins and graph size can be easily adjusted to best fit your particular need for numbers and titles. If you need more room, all you have to do is change a number or two in order to move or shrink the graph.

—GRAPHS continued from p. 30

saves a lot of plotting time. Again, notice that many of the letters from the initial listing have been re-defined for use in these routines.

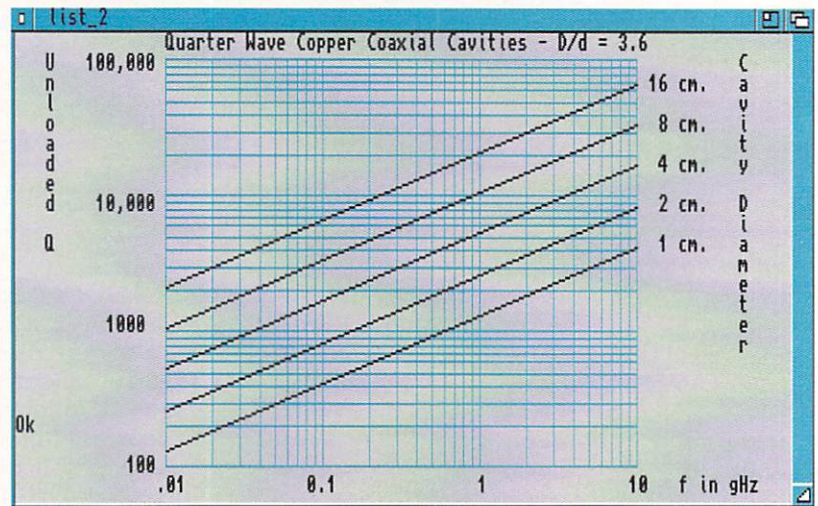
N is set to 1 for the beginning of the line and the Lineplot routine is called. This calculates the value of Q, sets the value of X to the origin, and calculates the value of Y. On returning to the loop, it sets the value of P and R to these values, changes N to 1000, and goes back to Lineplot to get the values for X and Y for the other end of the line.

When it returns, it draws the line between the two sets of coordinates P,R and X,Y. It then doubles the cavity diameter and repeats until all five lines are drawn. Your problems will probably be very different but you should find this technique useful. The fact that the graph starts at Y=100 and not zero requires that the equation for Y in the Lineplot section be modified by the constant V which is defined in the original listing.

There are a couple of things which you've probably already noted. One of them is the use of semicolons after commands to print numbers, etc. These are necessary in order to suppress carriage returns generated by BASIC itself which would fragment the graph. Should you forget to control the "ok" that is automatically placed at the end of the program run, you are liable to find that the top of your graph has been pushed up and off the screen. Remember to put it where it will not obscure any of your data.

The other thing is the use of INT() in the line plotting routines in order to produce integer numbers. Plots go from pixel to pixel on the screen, and there is no such thing as a fractional pixel. Using anything but integers to plot points will waste time, could cause jagged lines, and might even cause your program to go out to lunch—indefinitely.

You now have the capability to plot and refine equations far faster than you ever could before, and you'll never again have to worry about whether or not the stockroom has the kind of graph paper you need. Once you've got it working to your satisfaction, you can add the titles, etc., and save it for a permanent record.



Listing One

*This is List_1, an example of the use of the semi-log program
*for plotting a typical equation.

```
CLS
a = 50          'X axis origin
B = 163         'Y axis origin
C = 530         'Length of X axis
D = 160         'Height of Y axis
E = a + C       'Endpoint of X axis
F = B - D       'Top of Y axis
G = 20          'No. of horizontal divisions desired
H = 2           'Number of log cycles desired
J = 2.302585    'Natural to common log convers. factor
L = 1           'Start of first log cycle
M = 10          'End of first log cycle
N = 1           'Step for first log cycle
P = 1           'Flag
R = 3.6         'Optimum cavity ratio

FOR K = B TO F STEP -D/G      'Draw the horizontals
  LINE(a,K)-(E,K),3
NEXT K

Cycle:
FOR K = L TO M STEP N        'Draw the log cycles
  GOSUB Xcycle
NEXT K

'Set
IF L=1 THEN L=20 ELSE L=L*10
M=M*10: N=N*10: P=P+1
IF P<H GOTO Cycle
```




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```
'Print the X axis numbers.
LOCATE 22,7
PRINT "1    2    3    4    5    7    10    20    30    40    50    70    100";
'Print the Y axis numbers
FOR K = 0 TO 20 STEP 2
  LOCATE (21-K),3
  PRINT USING "#.#"; K/20
NEXT K
```

```
'Print the title
LOCATE 23,20
PRINT "Figure 1.  Unloaded Q Correction Factor";
```

```
'Line plotting routine for equation
'Reset
L=1; M=10; N=2; P=1

PSET (a,B)          'Start lineplot at graph 0,0

Nextsegment:
  FOR K = L TO M STEP N      'Draw the line segments.
    GOSUB Lineplot
  NEXT K
```

```
'Reset Again
L=L*10; M=M*10; N=N*10; P=P+1      'Increment the constants
IF P=<H GOTO Nextsegment
```

```
Finish:
LOCATE 18,1          'Put BASIC's OK here

END
```

```
Xcycle:
  X = a + INT((C*LOG(K))/(H*J))
  LINE(X,B)-(X,F),3
  RETURN
```

```
Lineplot:
  W = ((1+R)/LOG(R))*(LOG(K))/(1+K)      'Equation to be plotted
  X = a + INT((C*LOG(K))/(H*J))
  Y = B - INT(D*W)
  IF P = 3 THEN GOTO Finish      'Stop at the end of the 2nd cycle
  LINE -(X,Y)                    'Draw the segment
  RETURN
```

Listing Two

'This is List_2, an example of the use of the log-log program to produce a graph.

```
CLS          'Clear the screen
A = 120      'X axis origin
B = 172      'Y axis origin
C = 375      'Length of X axis
D = 162      'Height of Y axis
E = A + C    'End of X axis
F = B - D    'Top of Y axis
G = 3        'Number of X axis log cycles
H = 3        'Number of Y axis cycles shown
J = 2.302585 'Natural to common Log convers. factor
L = 1        'Start of first log cycle
M = 10       'End of first log cycle
N = 1        'Step for first log cycle
```

```
P = 1        'Flag
R = 1        'Flag
S = G        'Flag
T = 1        'Initial cavity diameter in cm.
U = 1332     'Maximum theoretical copper cavity Q
V = 100      'Minimum Q of graph (Y axis zero)
```

```
Graph:
  FOR K = L TO M STEP N      'Draw the log cycle
    IF R = 1 THEN GOSUB Xcycle ELSE GOSUB Ycycle
  NEXT K
```

```
'Set
IF L=1 THEN L=20 ELSE L=L*10
M=M*10; N=N*10; P=P+1
IF P=<S GOTO Graph
```

```
'Reset
L=1; M=10; N=1; P=1; R=R+1; S=H
IF R=2 THEN GOTO Graph
```

```
'Print the numerical designations
LOCATE 22,12: PRINT "100";
LOCATE 15,10: PRINT "1000";
LOCATE 9,9: PRINT "10,000";
LOCATE 2,8: PRINT "100,000";
```

```
LOCATE 23,15
PRINT ".01    0.1    1    10 f in GHz";
```

```
LOCATE 3,64: PRINT "16 cm.";
LOCATE 5,65: PRINT "8 cm.";
LOCATE 7,65: PRINT "4 cm.";
LOCATE 9,65: PRINT "2 cm.";
LOCATE 11,65: PRINT "1 cm.";
```

```
'Print the titles
LOCATE 1,16
PRINT "Quarter Wave Copper Coaxial Cavities - D/d = 3.6
```

```
A$ = "Unloaded Q"
B$ = "Cavity Diameter"
```

```
FOR K = 1 TO LEN(A$)      'Print "Unloaded Q"
  LOCATE 1+K,4
  PRINT MID$(A$,K,1)
NEXT K
```

```
FOR K = 1 TO LEN(B$)      'Print "Cavity Diameter"
  LOCATE 1+K,73
  PRINT MID$(B$,K,1)
NEXT K
```

```
'User's line plotting routine
FOR K = 1 TO 5            'Plot lines for five cavities
  N = 1
  GOSUB Lineplot          'Get starting point of line
  P = X: R = Y
  N = 1000
  GOSUB Lineplot          'Get endpoint of line
  LINE (P,R)-(X,Y)        'Draw the line between these points
  T = T * 2               'Double the cavity size
NEXT K
```

```
LOCATE 20,1              'Put BASIC's "ok" here.
```

```
END
```

```
Xcycle:
  X = A + INT((C*LOG(K))/(G*J))      'This does the vertical lines
  LINE (X,B)-(X,F),3
  RETURN
```

```
Ycycle:
  Y = B - INT((D*LOG(K))/(H*J))      'This does the horizontal lines
  LINE (A,Y)-(E,Y),3
  RETURN
```

```
Lineplot:
  Q = U * T * SQR(.01*N)      'These are the user's equations
  IF N = 1 THEN X = A ELSE X = E
  Y = B - INT((D*LOG(Q/V))/(H*J))
  RETURN
```

•AC•

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PARNET

A Public Domain System for Networking Amigas

by Walter Steuber

Back in 1988, it did not cause much of a stir when Matt Dillon wrote some software that enabled him to connect one Amiga to another. At that time, very few of us had multiple Amigas and, besides, few of us knew any reason why we would want to operate two of them as a single unit. The situation has changed drastically since then, however, with the advent of CDTV and the widespread use of hard drives. Now, PARNET has become an important tool in Amiga operation. Tying two Amigas together dramatically increases what we can do with our favorite machine, in ways that I, at least, did not anticipate.

PARNET merges two Amigas into a single system through a special cable going from one parallel port to the other. Early forms of PARNET were complex and difficult to set up, but Doug Walker and John Toebe of the Software Distillery have polished and jiggled it through several rewrites until it now can almost be called straightforward. It still might be considered a little tricky to set up because there are some strange files that must be copied into each component machine. But before discussing the details of getting started, let's look into what is so marvelous about using PARNET.

Anyone who has files stored in one machine but wants to use them on another should think PARNET. A program on a hard drive, for instance, can be run by either machine when they are connected by a PARNET cable. Applications can be launched from either keyboard. Each machine has access to the other's RAM. Each can use the other's peripherals (except, of course, those that need a parallel port. Remember, both parallel ports are tied up by PARNET.) The communication between the machines is fast enough that there is no noticeable difference between writing to your own floppy or writing to a floppy in the other machine.

A little public domain software and a special cable have made your Amiga substantially bigger! If you are fortunate enough to have a hard drive in each machine, you will find PARNET especially useful

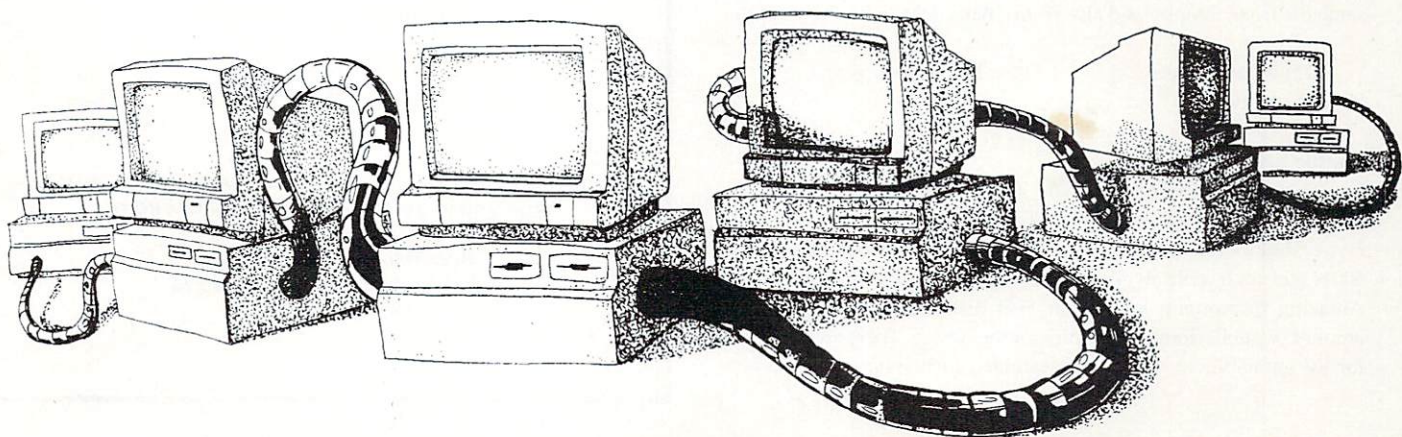
for moving and copying things from one to the other. The disk management systems that I've tried (*DirectoryMaster*, *SID*, and my favorite, *Directory Opus*) all handle the transfers very nicely. Either machine thinks the other is a device called NET:, so a CLI command, say, to copy a file called FOO.TXT from a local floppy over to a hard disk in the other machine would simply be

```
copy df0:FOO.TXT to NET:dh0
```

But wait. The foregoing nice things about PARNET barely touch on what makes it interesting. The blockbuster use of PARNET is with CDTV. Hooking up to a CDTV jumps a regular Amiga up to a whole new level of power, enabling it to do some things that used to be totally beyond it.

Commodore has been trying to sell their CDTV product for about a year now as an entertainment machine that looks and acts like a video cassette player. Actually, though, under this thin disguise it is a standard Amiga with a CD-ROM drive instead of a floppy drive. It has, among other things, a normal parallel port through which it can make a PARNET connection to your regular Amiga and thereby put a CD-ROM reader in your system. Material on the CD-ROM is read just the same as it would be read from a hard drive. It can't be written, of course, but its huge capacity opens up entirely new areas of usefulness.

To comprehend just how much data a single CD-ROM can hold requires some imagination. It's equal to about 700 of our floppy disks, a pile over seven feet high! When I got a 40MB hard drive, I thought I had a lot of capacity, but it would take 16 such drives to hold the contents of one removable CD-ROM! The stupendousness of this capacity is only beginning to sink into the consciousness of the Amiga community, even though it has been around the IBM and Macintosh worlds for a year or so. CD-ROMs make huge bodies of data available, and these, in turn, inspire new ideas about what to do with a computer.



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A CDTV boots up pretty much like other Amigas. If there is a CD-ROM in its drive, it looks there for a startup-sequence. But if there is a Workbench disk connected to its external disk port, it looks first in the floppy for a startup-sequence. This gives the user a way to hook into the otherwise write-protected CDTV machine, something that is necessary if a PARNET connection is to be established. Oh, oh, you say. A new requirement has been slipped in—an external floppy drive must be connected to CDTV for PARNET to work. All I can say in mitigation is that PARNET makes the floppy drive part of the combined system, so it can be used for general purposes by the regular Amiga even while it is connected to CDTV. If this is a problem, Commodore offers an optional kit to supplement CDTV operation, consisting of a floppy drive, a mouse, and a keyboard. With PARNET, however, you don't need the extra mouse or extra keyboard because your regular peripherals will be in control.

To get some indication of how fast the PARNET system transfers data from one place to another, I timed how long it took to move a typical file from the CD-ROM to the RAM in my A3000. I moved the same file from a floppy and also from a hard drive with these results.

CD-ROM: 9.1 secs
Hard drive: 1.0 sec

Floppy: 9.3 secs

The file size was 165K.

A wonderful CD-ROM that I frequently slip into my CDTV-PARNET-Amiga system is the Fred Fish Collection issued by HyperMedia Concepts, Inc. Every single Fish disk from No. 1 to No. 600 is there in its entirety. People who read the tiny print at the end of Amazing Computing know that Fish disks contain an enormous amount of public domain software for the Amiga. There are programs for the game-player, for the programmer, for the hacker who keeps

modifying his system, and for just about every other special interest.

With this CD-ROM, every one of the 2,959 Fish programs is right there in my system, on-line, ready to run. Where I used to grudgingly allot space for perhaps 40 of them, I now have all 2,959 and they don't take up any of my old space at all! In fact, it frees up about 1MB of space by including the Workbench standard files like C, S, L, LIBS, DEVS, TOOLS, UTILITIES, SYSTEM. I simply can't express how marvelous I find this. Of course, special programs are needed to handle such an enormous amount of material, and they are also included on the CD-ROM. A few examples of its icon-launched programs are

- *Aquarium*, a search program that enables you to check quickly through all the listings in the Fish disks. You can ask for a keyword, a topic, or the program name, and it very quickly displays a program description that matches your request.

- *Express_Copy*, a diskcopy program that will copy an entire Fish disk from the CD-ROM to your floppy drive in less than two minutes.

- *SID*, a directory manager that can be used either to copy a single program from a Fish disk or just to read through it. SID will also launch most of the programs into execution directly from the CD-ROM.

- An icon for each group of 30 Fish disks. Clicking one of these brings up a screen of 30 icons, one for each disk. Clicking one of these in turn brings up icons for each program on the disk. These icons are all organized in a way that makes it very quick to zero in on what you want.

A CD-ROM version of the game *LEMMINGS* comes included with the CDTV, intended to be displayed on a TV set and operated by

PARNET Information

If you want to keep up with geographical data on CD-ROMs that is offered by the U.S. government, ask for information from

U.S. Geological Survey
Earth Sciences Information Center
507 National Center
Reston, VA 22092
(703) 648-6045

If you don't want to make your own cable, it can be purchased from

Design Computer Systems
4132 10th Ave. N
Lake Worth, FL 33461
(407) 967-9222

If you go all the way and set up both PARNET and CDTV, I urge you to get the Fred Fish CD-ROM from

HyperMedia Concepts, Inc.
5200 Washington Ave, Suite 224
Racine, WI 53406
(414) 632-3766

buttons on a remote control. This turns out unintentionally to be a striking demonstration of the value of PARNET. Playing the game through PARNET is a lot more fun because the control is much, much better with the regular mouse than it is with the remote control. Furthermore, the images are decidedly crisper on the Amiga monitor than they are even on a very good TV screen.

LEMMINGS also turns out to be a beautiful demonstration of the power of CD-ROM. It has a lot of music and graphics that gobble up, as we all know, loads of memory. When Psygnosis delivered the game on one or two floppy disks, they were under a serious space constraint. But when they went to CD-ROM, they cut loose. They added variety to the music, they added new graphics, they added many new levels of difficulty and, in sum, were able to deliver a game with much more content. The CD-ROM version would require 35 floppy disks to hold it, but that's nothing in this new technology.

A relatively new buzzword in the CD-ROM game is GIS, standing for Geographic Information Systems. Geographical information stored in digital form has some advantages over printed pages, but requires enormous amounts of memory, and consequently is a natural for CD-ROMs. Maps and three-dimensional landscapes generated from digital databases are only beginning to be seen in the Amiga world, but they are a billion-dollar business in the military and business worlds. (A magazine called *GIS World* puts out a sourcebook of GIS companies and projects that is over 600 pages long.) There probably are dozens of GIS CD-ROMs around, but I have managed to actually get my hands on only one that contains geographical data in digital form. It is sold by the U.S. Geological Survey for \$32.00. It is called *U.S. GeoData 1:2,000,000-Scale Digital Line Graph (DLG) Data*. It contains an overwhelming array of numbers in ASCII files that are typically 1 or 2MB in size and can be displayed or read by the Amiga just as though they were on a normal hard drive. The GeoData CD-ROM also contains source code, in C, for a number of programs designed to manipulate the data and to display it as various kinds of maps. The code, unfortunately, is written with MS-DOS graphics in mind and does not immediately work with AmigaDOS graphics.

World Vista Atlas is a CD-ROM containing geographical information and is prepared specifically for use on CDTV Amiga. It contains digitized reproductions of maps, flags, and photographs which have no particular advantage over a conventional atlas, but it also includes audio samples of local speech and music for many countries. With a PARNET connection, any of these hundreds of maps, pictures, and audio files can be copied into your normal Amiga system.

Commodore has started to supply information to its developers via CD-ROM. There is so much technical data and details to pass on that it has required dozens of disks a year for each developer. Now an occasional CD-ROM will hold all that stuff and much more that might otherwise not get transmitted. Of course, the developer has to have a CDTV to read it and a PARNET to copy it into his regular system.

New Amiga CD-ROMs are being announced all the time. The current list put out by Commodore has 116 titles, including games, educational material, references, etc., with a great variety of intriguing names. Such an enormous body of material makes examining and reviewing them a full-time job in itself. The very few I have carefully looked at, I'm sorry to say, have disappointed me, but what the heck. Some, but not all, are organized into individual audio and graphics files that can be PARNET-copied over to an Amiga and used for other purposes.

CD-ROMs prepared specifically for MS-DOS or Macintosh systems abound. Besides the mountain of games, there is a catalogue of a million stars. There are disks full of law material, public domain programs, medical information, geographical data, museum holdings, census figures, and several other voluminous bodies of data. They are readable by an Amiga in the sense that they nearly all are formatted in



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the same ISO 9660 convention that CDTV uses, but most of the disks are not useful because each depends upon its own reader program to make sense of the 650 million bytes or so on the disk. However, it is only a matter of a little time, I suppose, until the necessary software is written to make Amiga able to use most of them.

I fervently believe CD-ROMs will be an area of important Amiga growth, and PARNET-CDTV lets us get on the bandwagon. There are references here and there to a Commodore CD-ROM reader called A690, but I haven't seen one for sale anyplace. People clever with a soldering iron sometimes wire up an IBM-type reader to their Amiga. However, the PARNET-CDTV combo currently seems to be the only practical way for me to ride along in the direction I think things are going.

If you want to install PARNET, you will first need Fish Disk 400—or some equivalent copy of the PARNET subdirectory. In it are docs that carefully and clearly explain how to make the special cable and how to copy the several small but necessary files. The files are supplied, but you will need to use the CLI or something like it. It isn't real simple, but it is described as clearly there as it could be here.

•AC•

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Fall river, MA 02722-0869

Usenet:

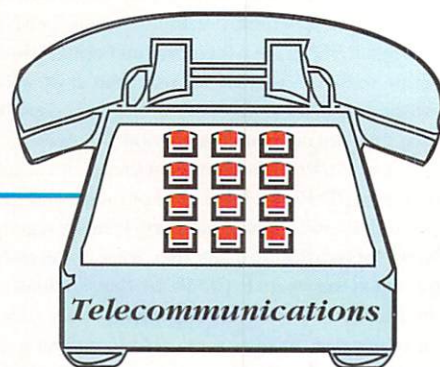
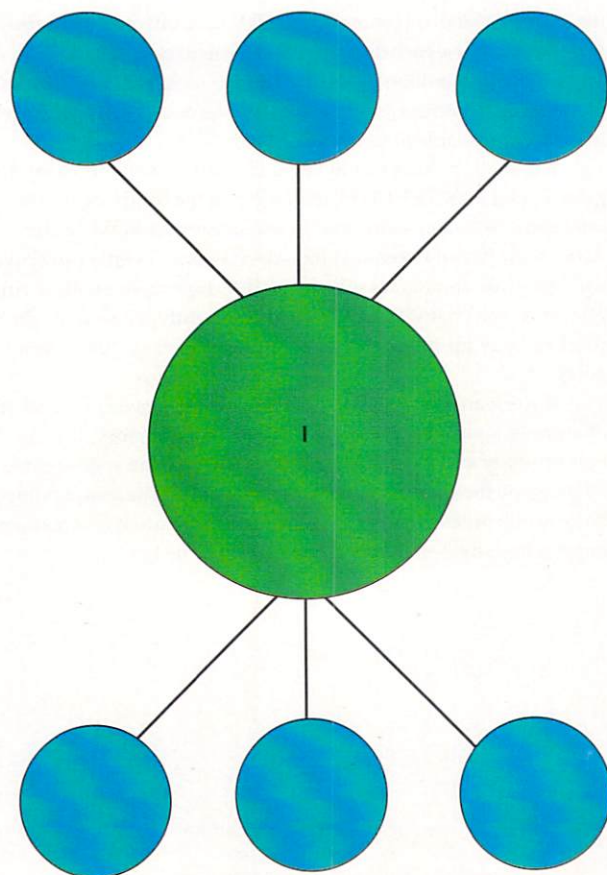
It's Not Just for UNIX Anymore

by Gary Fait

Most computer users are familiar with local bulletin board systems (BBS). Many others actively use services such as CompuServe, GENie, and Bix. But if you have a serious craving for Amiga information, you should tap into Usenet. Usenet is, among other things, the largest electronic BBS in the world. It began as an informal network for Unix-based computers, but it is now loaded with programs and information for most computer platforms, including the Amiga.

Reading the "News" is a daily passion with many Amiga users as they seek to learn more about their computers, check on the latest developer news, or solve programming problems.

Usenet is unlike the commercial networks. CompuServe, for example, is a "centralized network." Remote sites, such as your



computer and modem, connect to a central site to exchange information. Usenet, on the other hand, is a "distributed network." Each site connects to the next site, or sites, to receive and forward information. Each Usenet site has well-defined responsibilities and serves as a "backbone," "branch," or "leaf" in the network.

Usenet began in 1979 when Tom Truscott and Jim Ellis, two Duke University graduate students, wanted to hook computers together to exchange information. The first links were established between Duke and the University of North Carolina.

As word of the system spread, other sites joined the network until today there are literally thousands of computers linked together. Anything from a mainframe monster to a desktop Amiga can be, and is, used as a network site.

What's News?

News on Usenet is divided into subject areas, or newsgroups. Major newsgroup subjects are computers, miscellaneous, news, recreation, science, social, and talk. Each main area is divided into sub-newsgroups. For example, the computer newsgroup is divided into a number of sub-newsgroups ranging from artificial intelligence to virus discussions. Each of these sub-newsgroups may be divided into even more sub-newsgroups. So, by following this hierarchical form of organization you can find comp.binaries.amiga, comp.sources.amiga, and comp.sys.amiga. Or, if you prefer, you can find "news" about rec.autosport, sci.geo.fluids, soc.culture.german, and talk.politics.theory. There are several hundred different active newsgroups on Usenet and new groups are regularly created.

There is also a series of newsgroups called alt, or "alternate." Not all Usenet sites carry the alt groups, however.

Some Amiga-related Newsgroups

- alt.sources.amiga
- alt.sys.amiga.demos
- alt.sys.amiga.uucp
- comp.sources.amiga
- comp.sys.amiga
- comp.sys.amiga.advocacy
- comp.sys.amiga.announce
- comp.sys.amiga.applications

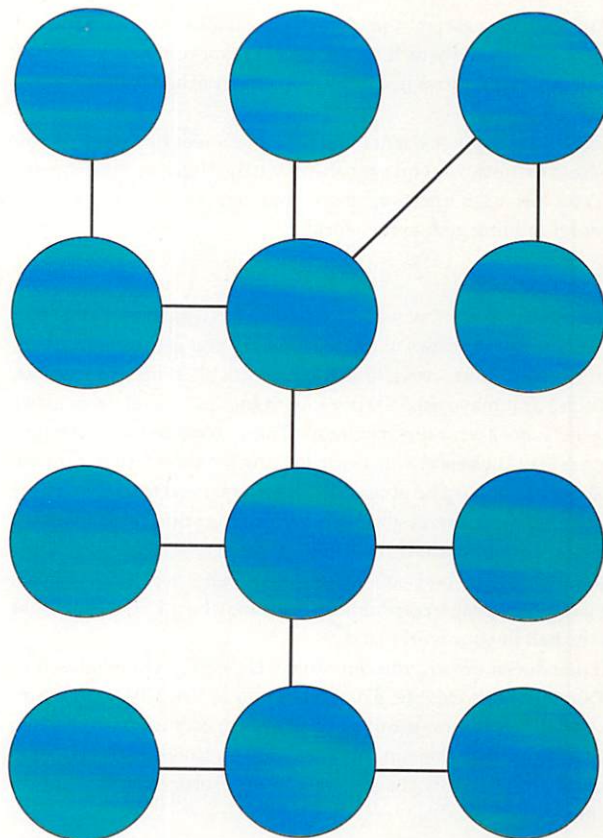
Right: Commercial networks such as CompuServe are "centralized" networks. Remote sites, such as your computer and modem, connect to a central site to exchange information.

comp.sys.amiga.audio
 comp.sys.amiga.datacomm
 comp.sys.amiga.emulations
 comp.sys.amiga.games
 comp.sys.amiga.graphics
 comp.sys.amiga.introduction
 comp.sys.amiga.marketplace
 comp.sys.amiga.programmer
 comp.sys.amiga.tech

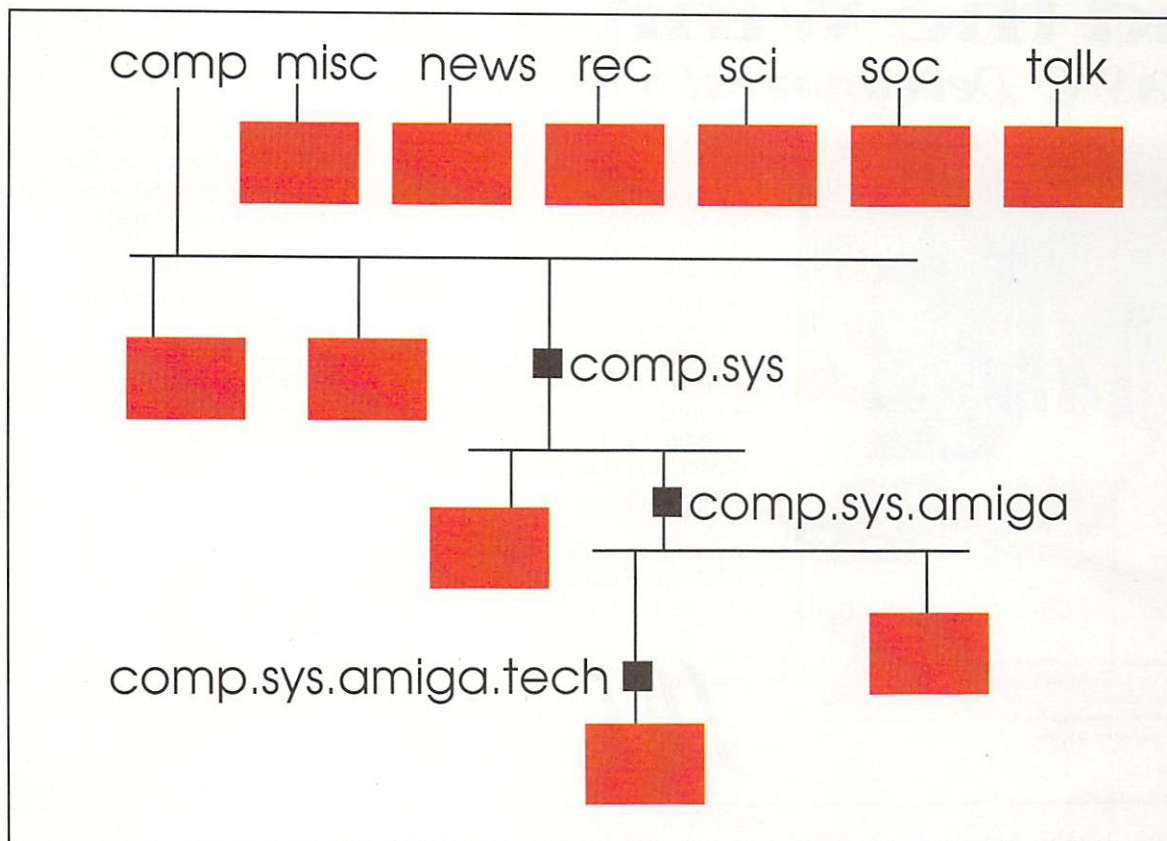
Amiga information is also included in a number of other newsgroups on an informal basis. For example, comp.archives usually includes network addresses for sites which have public domain archives for the Amiga.

Controlled Anarchy?

Usenet has been described as an "anarchy." It is "controlled" by tradition and little else. While some newsgroups are screened by a moderator, most news items are uncensored. News items range from the serious to the absurd, from the mundane to the humorous, from the fascinating to the worthless. You may find the answer to your programming question in comp.lang.c++ or comp.lang.rexx. You most certainly will find candid opinions in talk.politics.drugs. You might learn the latest on cold fusion in sci.physics.fusion. And you surely will find something controversial in soc.rights.human. Of course, the nice thing about Usenet is that you don't have to read or see anything you don't want. The best advice to new Usenet users, however, is to stay calm. There is just too much information to digest. In fact, it is not uncommon for as much as 4MB of news to go across the network each day. You probably will not have time to read that much, so it is best to pick and choose your newsgroups carefully. Sometimes, it is best to stick with just one major newsgroup area to begin.



Above: Usenet is a "distributed network". Each site connects to the next site or sites to receive and forward information. Below: The newsgroup hierarchy.



Newsgroups are kept in a hierarchy. Each group has sub-groups, and each sub-group may have other sub-groups.

And with the vast amount of news crossing the network, you are unlikely to find a site which stores news for more than a couple of weeks. News is usually rotated, with older material being discarded as new material arrives.

Did I mention that Usenet is a two-way street for users? If you have access to the news, you probably have the ability to "post" news items. You can ask a question, share your opinions, or release your latest programming gem to the world.

Gaining Access

Okay, okay! Now that you are interested in Usenet, now that you can't wait to read the news everyday, how do you gain access? Well, it may be easy to gain access, or it may be difficult. It may be free (not impossible) or it may cost \$500 per month (not probable). Remember that Usenet is not a centralized network. There are no headquarters and no main office. The best way to begin looking for a connection is to ask around. Seriously! To gain access to Usenet, you need to find someone who already has access. A good place to start is your local college or university computer lab. If they don't have access, they may know someone who does. Many companies have Usenet access, too. In fact, if you work for a major corporation, there may be a Usenet site right down the hall in your workplace.

If that doesn't work, you can contact UUNET Technologies, Inc., 3110 Fairview Park Dr., Ste. 570, Falls Church, VA 22042; (703) 876-5050. UUNET is a non-profit corporation dedicated to providing Usenet access, public domain software, and electronic mail services to the public. The company charges monthly for subscriptions and connect time.

When you find your Usenet connection, you will probably gain access to the net in one of two ways. First, you may be able to connect as a Usenet site yourself. (Fred Fish Disks 479 and 480 have Matt Dillon's implementation of UUCP, everything you need to become a Usenet node.) Be forewarned, however, that it will take some work to set up the software and you will need plenty of disk space if you plan to receive more than a few newsgroups.

The second method of access to Usenet is as a "client" through someone else's computer. For example, I belong to an organization which operates a larger computer connected to Usenet. I am able to connect with the machine, activate the "news reader" software, and access all the newsgroups. I don't have to maintain the system, nor do I have to provide the storage space or the actual network connection.

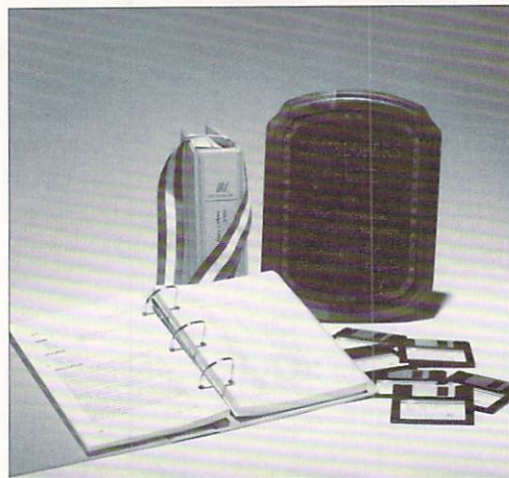
By the way, you may get electronic mail (Email) and Internet privileges along with your Usenet access. The Internet is a worldwide network of regional networks. It is the superhighway of data, but that is a subject for another day.

Finding access to Usenet may not be as easy as subscribing to one of the commercial networks, but it is definitely worth the effort. What began as a Unix network between educational institutions has become an important information source for all computer users.

•AC•

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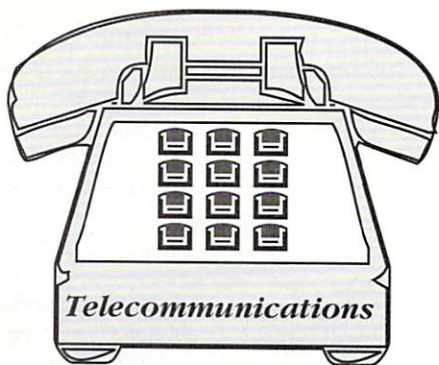
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Amiga Point Node Software

by David Slonosky

Anyone familiar with FIDO Net, IMEX, or any of the other hobbyist computer networks knows emphatically that time is money. Popular message echoes in these networks can have from 200 to 300 messages per day! Not only does this involve phone costs for the boards transferring the messages, but it also causes problems for people who want to keep up on all the news in these echoes. Imagine how much time you would spend online reading 200 messages, let alone replying to the ones that interested you.

Fortunately, there are ways around this problem. One method, which I have been using myself for the past two years, is to find a friendly sysop who will agree to set you up as a "point node." The sysop configures his/her system so that new messages in the echoes you like are automatically copied to a file which you can download at any time. The sysop then becomes your "boss node," or "boss."

In turn, you need three basic pieces of software. First is a mailer, a specialized terminal program whose sole function is to connect with your boss. It sends your messages and receives all new messages waiting for you at your boss.

Second, you need a message tosser and a message packer. The packer scans the message bases of your point node and picks out new messages and replies you have written since the last time you ran the packer. It then "packs" them into a file ready for upload to your boss. The tosser performs the reverse function, taking the message file from your boss, extracting the messages from it, and putting them into the proper bases on your machine.

Finally, there is the message editor. This utility allows you to read messages and write replies and new messages. Typically it works in conjunction with your favorite ASCII text editor. You use

the text editor to edit your messages, while the message editor formats them according to the standards of the network, so they can be transmitted properly.

A point node gives you the opportunity to quickly download messages, free up your phone line rapidly, and read and reply at your leisure. In addition, depending on how trustworthy you are and how nice your sysop is, you may be granted the ability to File Request (FREQ) files from your boss. This allows you to send a separate file from your message file which contains the names of the files you would like to receive (games, utilities, and other goodies), and the boss node will send you the files back, usually in the same call in which you make the FREQ. In addition, you can automate your calling times so that your computer can call your boss in the early morning hours when phone lines are least busy so you don't have to waste any time waiting for file transfers.

The Basic Utilities

In general, all the software listed here should work on a 1MB machine. I strongly recommend that for running a point node, you consider buying a hard drive if you do not have one already. The speed of packing and tossing a large number of messages on a floppy-based system can be very frustrating, unless you are very patient.

As far as I know, all the software listed here runs under both Workbench 1.3 and 2.0, based on information from the authors, other users, and from personal experience. All version numbers, PD or shareware status, and registration fees were current with the writing of this article. Please check yourself, however, for any changes which may have occurred.

Note that all transferred files are generally compressed using a utility such as ARC, Zoo, Zip, or LHarc. The ones which I recommend because of their superb compression ratio and speed are LZ (latest version 1.92, freely distributable), and LhA (latest version 1.22, shareware). They are especially good for people who are point nodes from IBM bosses, as they are 100% compatible with the comparable MS-DOS archivers.

Finally, many point nodes make the transition to become a full boss node themselves. I will note which pieces of software can be used in both environments. Many BBSs on the Amiga now use one or more of these software packages to operate in FIDO or one of the other hobbyist networks, so your initial shareware investment can pay off twice.

```
Forge.d. Call F Low
OK
Protocol Start
Dialing 544-7787
OK
OK
CONNECT 2400
Knocking!
WhackDone!
Door answered!
TrapDoor 1.80/110197 on Node 89:487/124.0

My log window
FI Start
0 IM1 10:15:47 Start 07 Apr 92; with Welmat 0.44
0 IM1 10:15:47 Primary local address is FidoNet#89:487/124.1
0 IM1 10:15:48 Started slave for line #2
0 IM1 10:16:03 Trying to connect to FidoNet#89:487/124.0 on line 2
0 IM1 10:16:03 Trying to connect to FidoNet#89:487/124.0 on line 2
0 IM1 10:16:03 Dialing 544-7787
0 IM1 10:16:20 Connect 2400
```

Left: Welmat — a kinder, gentler mailer?


```

TrapDoor 1.80 -- Copyright © 1991 by Maximilian Hantsch & Martin Laubach
The Zen Amiga Hangar 1:249/104.5
7-Apr-92 18:19:41 TrapDoor 1.80 opened
7-Apr-92 18:19:49 Calling 542-9499
7-Apr-92 18:20:18 CONNECT 2460
7-Apr-92 18:20:32 Name: Static Dependant BBS (1:249/104.5)
7-Apr-92 18:20:32 AKA: 89:487/120.0 89:487/0.0 89:487/1.0 11:1
7-Apr-92 18:20:32 Sysop: Steve Synett
7-Apr-92 18:20:32 Place: Kingston, ON (542-9499)
7-Apr-92 18:20:33 Password-protected session
7-Apr-92 18:20:36 Receiving 00077d06.pkt (612 bytes)
7-Apr-92 18:20:39 Took 0:02, Cps: 211, Efficiency: 87%
7-Apr-92 18:20:40 Receiving 000000fb.noi (16796 bytes)

ZedZap Session with Static Dependant BBS (1:249/104.5)
2/32-Receive "00077d06.pkt" (612 bytes) Successful
2/32-Receive "000000fb.noi" (16796 bytes)
ofs: 1024, blk: 512, cps: 208, time: 0:04, mem: 1:15

```

Above: TrapDoor doing a mail transfer, with log window (top) and file transfer status window (bottom).

```

AMIGA_PROG Msg #35 (2443 Bytes)
From: Mike Manzanao KILL
To: Alex Topic
Subj: Re: datafiles? - 13 Apr 92 15:00:02

EID:6908 188d7800
MSGID: 1:1350/32.0 1add62f5
Okay, let's do an example. I'll tone down the structure a little bit
to make things simpler. We'll work with this:

struct mystruct
{
    char name; /* Overkill, I know, I know... */
    int age;
    char sex;
};

Now, we'll write that file to disk.

FILE *fp;
struct mystruct p = {

```

The reader portion of the point integrated editor "Point Manager". You can control replies, deleting messages, and so on by either using the keyboard or by clicking on the gadgets at upper right. In PM (like all the other integrated packages) you move through the messages by using the cursor keys.

Frontdoor Mailers

Both the currently available mailers for the Amiga have conferences dedicated to them in FIDO Net called *Welmat* and *TrapDoor*. The software authors and experienced users participate in these echoes, so there is no problem with getting help if you are stuck on a particular problem when setting up. In addition, since they are so specific, answers to your questions are received rapidly.

Welmat and *TrapDoor* both contain a nodelist processor, which is important if you decide to start running a networking BBS system some day. The processor allows you to enter the identity number of the bulletin board system you want to contact, and the mailer will then dial the number of that bulletin board automatically. The nodelists are updated weekly, showing new boards, discontinued boards, and BBSs with high-speed modems.

Welmat

Welmat is a freely distributable frontdoor mailer first created by Michael Richardson and later further developed by a team of programmers headed by Russell McOrmond. The source code for the most current release of *Welmat* is always available by sending a blank diskette and a self-addressed envelope to Russell. He urges programmers who are interested in working on freely distributable network utilities to contact him. See list of addresses at the end of this article.

Welmat works well in connecting to most other mailers. Many boss sysops use it for their mailer sessions, including *TransAmiga* and *Dialog Pro* boards. In terms of features, the most notable one lacking for a point node user is the ability to do *ZedZap* transfers. *ZedZap* results in speedier file transfers with better error-checking than the protocol used by *Welmat*. However, *ZedZap* is one of the next planned major upgrades to the program, along with EMSI. See below.

TrapDoor

TrapDoor is the mailer offered by two programmers in Austria, Maximilian Hantsch and Martin Laubach. The program is currently at version 1.80, and is distributed as shareware. Until the registration fee of 400 Austrian schillings is paid (between \$50-60 U.S., depending on the exchange rate at the time), you are presented with requesters which you must click on in order to run the program. You can either register directly with the authors or send money to their North American distributors (contact addresses at end of article) to receive a keyfile which will allow the program to go through without interruptions.

TrapDoor offers both *ZedZap* and the EMSI protocol. EMSI stands for Electronic Mail Standards Identification, and allows for improved handshaking and control of file transfers between two EMSI-compatible systems. EMSI has been implemented in only a few mailers for any computer, and this is a strong point in *TrapDoor's* favor.

The decision of which one to use depends on what you are looking for in a mailer. *Welmat* does work adequately as it stands right now. My main criticism is that the documentation would benefit from being made clearer, and that there is another set of

Welmat:
 Russell McOrmond
 646 O'Connor St
 Ottawa ON
 K1S 3R8
 (613) 235-3287

FIDO: Russell McOrmond@ 1:163/109.1
 UUCP: rwm@atrx.OCUniv.On.Ca

TrapDoor:
 TrapDoor Development
 Maximilian Hantsch
 Matzleinsdorfer Platz 3-4/3/10
 A-1050 Wien
 Austria / Europe

Point Manager:
 Mario Pacchiarotti
 Via Campania 14/A3
 00040 Cecchina - Albano Laziale (RM)
 Italia

GCCHost:
 Davide Massarenti
 Via Mascherella, 11
 41100 Modena (MO)
 Italia

TrapDoor North American Support Center:
 Telepro Technologies
 20-1524 Rayner Avenue
 S7N 1Y1 Saskatoon, SK.
 Canada

FIDO: 1:140/90
 BBS: +1-306-249-2352
 Fax: +1-306-244-1947
 UUCP: telepro!tomconroy@herald.usask.ca

Foozle:
 Foozle Development Center
 c/o Peer Hasselmeyer
 Bursastr. 6
 W-6100 Darmstadt
 Germany

Contact Addresses

utilities (called Flowtoys, latest version 2.3) that you need in order to be able to send files properly. The Flowtoys are mentioned in the documentation of the Welmat distribution archive, but the fact that they are essential to Welmat's operation is not. However, the team working under Russell's guidance is committed to producing "no charge" networking utilities, and with the addition of ZedZap and EMSI, Welmat will be a much stronger mailer for those who have to phone long distance to pick up their mail.

At present, TrapDoor is more fully featured. It has speedier file transfer protocols, so if you have to call long distance to get your files, this may be a crucial factor. In addition, I found the documentation and included samples to be clearer. Although setting up either mailer is an involved task, TrapDoor is a bit easier since it only involves one executable; Welmat has been designed to multitask more smoothly, so it has a set of executables which interact to perform the mailer duties. Again, including some sample ARExx or AmigaDOS scripts in the Welmat documentation would have been a big help to setting it up.

The choice is up to you. Both perform adequately, with TrapDoor edging out Welmat on ease of setup and file transfer speed. Still, Welmat is a freely distributable program while TrapDoor carries a hefty shareware fee, so people with low budgets may want to consider this. In any case, it's nice to have two such fine mailers to choose from on the Amiga.

Integrated Packages

The trend these days is to develop integrated point node packages which combine the message editor and the tosser/packer functions within the same executable. This is both good, in that these packages are easier to use and are usually quicker in their import/export tasks, but bad in that speed is usually gained by the use of a non-standard message format so that a bit of flexibility in configuring your system is lost by being forced into using a single program for all your needs.

Fortunately, all of the programs here allow for flexibility in configuring one set of menus to your personal tastes, and if you just want to set up quickly and be done with it, then integrated packages are what you should be looking for. Also common to all the programs here is an ARExx port to allow for automated control of their functions. In fact, GCCHost is all ARExx port, as you will see from its description.

Foosle

Foosle (latest version 1.0, shareware, price 50 DM at the time of writing) is an integrated package created by Peer Hasselmeyer. It offers the standard features of editor and tosser/packer, plus an ARExx port. In addition, it offers the easiest way to send mail to multiple addresses, which is a real plus if you are thinking of going to full node status.

Foosle follows the current practice of many European utilities in using many requesters to remind you to register the program. My main problem with the program was that it was very tedious to set up if you had more than a few message areas, as you have to use the supplied initialization utility in order to enter information on each one.

Point Manager

Point Manager (version 3.00, beta), is the work of Mario Pacchiarotti and is a shareware product. However, the only "fee" the author asks is for you to send him a postcard of your home town. It uses its own proprietary message indexing scheme to speed up message reads and writes.

The program as it stands has a nice user interface, but I had

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problems with it, using an unregistered beta version. It would sometimes unarchive packets and then delete them, leaving me with an empty incoming message directory! If I unarched the packets manually and then imported them, everything worked fine.

GCCHost

GCCHost (latest version 3.6b) is a product of Davide Massarenti, and is shareware with a \$30 U.S. registration fee. It is unique among the integrated packages in that it can only be controlled through ARExx, so if you do not own a copy of ARExx, you may want to think about using another integrated utility. If you do own ARExx, GCCHost is very configurable. The distribution archive comes with all the ARExx scripts you need to set up a point node properly, so even if you do not know much about the language, you can easily set up and start running a point node almost immediately.

Conclusions

This is a very basic summary of what you can do with a point node and the software available to set it up on your Amiga. For a more complete summary of what FIDO Net is and how computer hobbyist networks operate, check out the TrapDoor documentation or the help material Russell McOrmond distributes for point node users.

My thanks to Bill Cassidy, sysop of Crossroads BBS (1:249/1), for his help in contacting authors and for valuable technical discussions.

•AC•

Please Write to:
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c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722-2140

1.> cli directory

It's About Time

by Keith Cameron

Computers are touted as being great time savers and work reducers. I don't necessarily find these sentiments to be true, though. I would argue, however, that computers are highly efficient, and therefore the time spent on them is more wisely spent. The more I use my computer, the more work I seem to create. Because so many other computer people I know say the same thing, it's about time I wrote an article about time.

This month, I want to concentrate on SETDATE, SETCLOCK, DATE, and CLOCK. The first three of these (SETDATE, SETCLOCK, and DATE) are all located in the 'c' directory of Workbench, while CLOCK is in the Utilities directory.

Let's begin by setting the time and date on your Amiga. You can, of course, open Preferences and set the time that way, but since this is a column about using the CLI, let's use AmigaDOS. To set the date, simply type in DATE followed by the correct date in DD-MMM-YY format. What this means is that you give the current day using numbers followed by a hyphen. Then you supply the first three letters of the month followed by another hyphen. Finally, you give the last two digits of the current year. As I begin this article, the date is March 11, 1992. If I were to set the date using this date, I would type

```
DATE 11-MAR-92 <RETURN>
```

Since the command is not case sensitive, it does not matter if you type the month in upper case, lower case, or any combination thereof.

Setting the time is not much different. To do so, use a 24-hour clock. The format is 00:00:00. The first set of digits is for the hour, the second set is for the minutes, and the final set is for the seconds. Be sure to include the colon between each set. Once again, as I type this, it is 5:42 P.M. To set my computer to this time, I would type

```
DATE 17:42:36 <RETURN>
```

Remember that this is a 24-hour clock rather than a 12-hour one.

You can also input both time and date on a single command line. It does not matter whether you place the date first or the time first, just as long as you separate the two with a space. An example of this would be

```
DATE 11-MAR-92 17:42:36 <RETURN>
```

Now your computer should be set to the correct time and date. To check, simply type DATE and then hit the return key. The current time and date should appear.

Before going further, let's look at two possible situations. Some users have a battery backed-up hardware clock while others do not. If you do not have such a clock, when you turn your computer off, the clock will stop. Next time you boot your computer and type DATE followed by a return, you will get the date of the most recently created file on your boot disk. This would happen even if you had set the time and date as we just did. After setting the date, if you were to create a file and then turn off your computer, the next time you booted your computer, the clock would be set to the time of creation of that file, not to the current date. So, each time you boot your computer, you need to set the time and date if you want your files to reflect the actual time when they were created.

Even if you have a battery backed-up hardware clock, your computer will not be set to the accurate date and time whenever you boot unless you take other steps. These steps include the use of SETCLOCK. After setting the date and time correctly as described above, you should then use SETCLOCK. It will record this time and date to the battery-powered clock; if this is not done, the time is not saved, and it will be lost when you turn off your computer. To use this command, type

```
SETCLOCK SAVE <RETURN>
```

On some older versions, it is necessary to include OPT between SETCLOCK and SAVE. This in itself is not enough, though, to give you accurate time. Yes, the correct time has been saved to your clock, but you now need to instruct the clock to give that time to your computer when you boot. You now need to go into the startup-sequence of your boot disk and include another short script:

```
SETCLOCK LOAD <RETURN>
```

Once again, some versions may require the inclusion of OPT between SETCLOCK and LOAD. The computer will let you know this. This command instructs the computer, upon booting, to load the time from the battery backed-up hardware clock rather than from the most recently created file. Thus, even though you do have a battery-powered clock, if these steps are not taken, your computer behaves exactly like one that does not have such a clock. If you have different disks that you boot your computer with, you need to install this script in the startup-sequence of each one. Some, like Workbench, may already have this command in the startup-sequence.

Now, what about all of those old files you have on your disks that have the wrong dates? Well, some people don't mind if the dates are wrong. Others, including myself, want our files to be accurate. There is

a way to change those dates if this is important to you.

The dates and other information about your files can be viewed by using the LIST command, which I discussed in a previous article. All you need to do is type LIST followed either by the name of the single file you are interested in or by a directory. In the latter case, all the files in the directory will be listed. Depending on your version of AmigaDOS, it's possible that you can examine all of the files on a single disk; to find out, examine the template and format for LIST to see if it includes the ALL option.

LIST provides several types of information about a file. The first thing you see is the size of the file. Next, the protection flags are listed. Most likely you will see "rwed," which stand for read, write, execute, and delete. Finally, you will see the creation date and time. If you decide to just change the creation date to the current date, the process is simple. All you have to do is type

```
SETDATE FILENAME <RETURN>
```

If you LIST the file at this time, you will see that the current time is displayed and that "Today" is written in the space reserved for the date.

Changing the creation date to the actual date of creation is a little more complicated. First of all, you have to decide when that date was. In all likelihood, the time is far less important and any time during that specific day will probably suffice. Once you have decided on such a date, you then need to give the computer this information using the following form:

```
SETDATE 15-01-92 01:30:45  
<RETURN>
```

You should have noticed that the method for supplying the date here is different than when using the DATE command. When using SETDATE, you supply the day first, then the month in numerical form rather than letter form, and finally the last two digits of the year. As with the DATE command, though, the hyphens are necessary. When you list the file, you may be surprised to discover that the date is listed as if created with the DATE command; that is, the month is given using the first three letters of the name rather than a number. In setting the date and time using this command, if you were to leave off either the date or the time, the current date or time would be inserted. If the current date and time had not been set, then, of course, the date and time of the most recently created file on the boot disk would be used.

If you have a battery backed-up hardware clock, you may want to configure your computer so that you have a clock visible for telling time. On newer versions of AmigaDOS, the Workbench clock is so versatile that you can select whether you want a digital clock or not, where you want the clock to be placed, how large you want it to be, and other details. Thus, you can place all of this information in your startup-sequence so that the clock is opened upon booting and placed exactly where you want it to be. Briefly, I'll summarize some of these options.

First of all, the format listing for the clock on more recent versions of AmigaDOS is as follows:

```
CLOCK [DIGITAL] [[LEFT] <n>] [[TOP] <n>] [[WIDTH] <n>]  
[[HEIGHT] <n>] [24HOUR] [SECONDS] [DATE]
```

I prefer to have a digital clock appear in the title bar of my windows, so I would select the DIGITAL option. The next four options specify where you wish the clock to appear. If you want to list all four locations, you would not need to type in the words (LEFT, TOP, WIDTH, and HEIGHT). However, if you used only one of these, you would then need to type that word in. For example, if you wanted to specify only the height and neglected to use the word HEIGHT, AmigaDOS would interpret the number as designating LEFT, for it is first in the list. All of these locations, by the way, refer to pixel location. Thus, if you used the number 15 in relation to LEFT, you are indicating that you want the clock to appear 15 pixels from the left. Also, if you select the digital option, you cannot specify the width or the height of the clock. These options apply only to a traditional clock face. The final three options are obvious. If you omit the 24HOUR option, you are indicating that you want a 12-hour clock, which is the default. If you omit SECONDS, then this feature will not appear. The same is true for DATE.

To locate the clock exactly where you want it will require some trial and error, but in a very short time, you should be able to place it in the most advantageous position for you. You can then place all of this information in your startup-sequence so that the clock will appear wherever you want it whenever you boot your computer.

The clock on older versions of Workbench is not nearly as versatile. From the command line, about all that you can do is open the clock. You then must point and click to select the options you want. You may wish to insert the clock in your startup-sequence so that it at least appears; then, you can select the type of clock you want—I prefer "Digital 2"—and place it where you want it. An alternative to this is to search through the public domain for a clock that better suits your needs. There is no shortage of clocks in this area. Many of them will be as versatile as the clock on the latest versions of Workbench.

Using the commands discussed above makes your computer more efficient by dating your files according to when they were created and by providing an onscreen clock to constantly apprise you of the time. Now you can use your time on the Amiga more wisely.

•AC•

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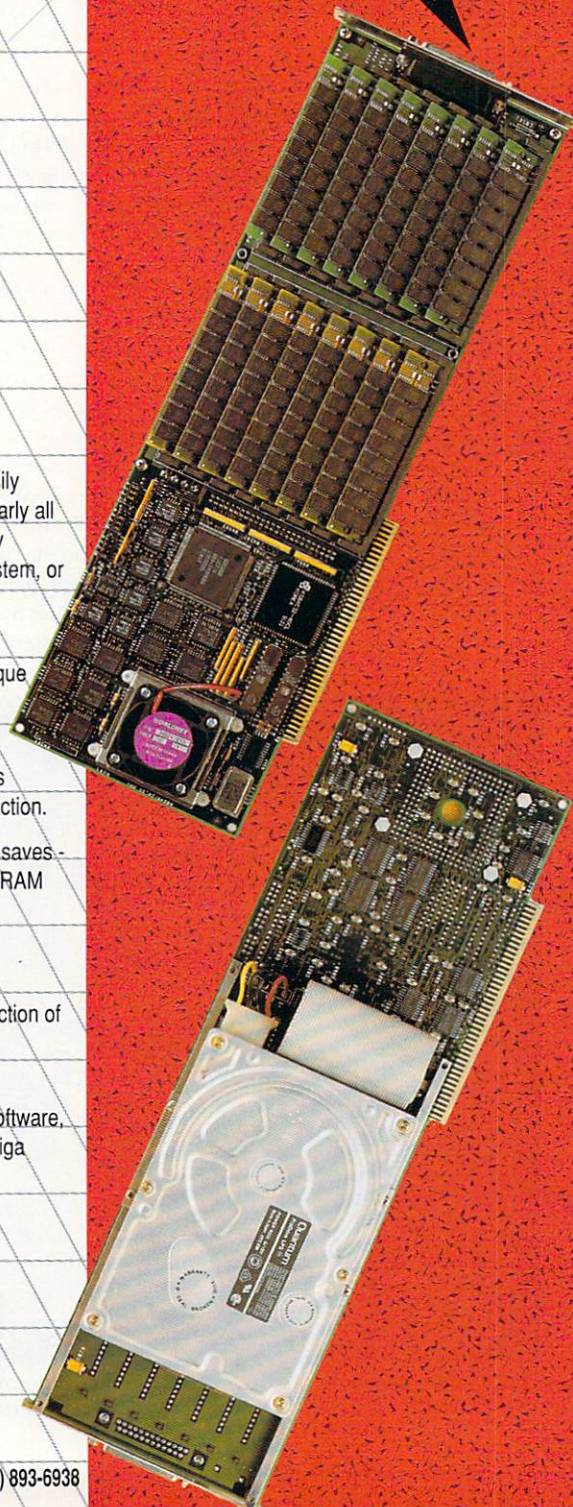
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Using ARexx to Make Star Fractals

Fascinating Images Output in PostScript or MathVISION

by Merrill Callaway

This month we explore a class of fractals called “star fractals” and show a couple of ARexx programs to output the results to a PostScript printer or to the plot screen of MathVISION (Seven Seas Software). Fractals are familiar as Mandelbrot Sets, or as fractal landscapes produced by “scenery generator” programs; but in fact, there is an infinity of different kinds of fractals—endlessly repeated geometric figures.

Star fractals are introduced on page 72 of the book *Fractals* by Hans Lauwerier, published by the Princeton Science Library. Star fractals are easy to produce with ARexx and a method or device to render the calculations. ARexx has no graphics capabilities whatsoever, but since it can use shared libraries, it has hooks into Intuition Graphics through the `rexarplib.library` as we saw in April. This month, we are going to use the interprocess control of ARexx to control MathVISION and create some pictures that would be rather less than straightforward to program in MathVISION format. MathVISION needs us to input “functions” in the “numerical swamp” in order to plot them. The difficulty of doing this with a star fractal is that our fractal is *not* a function; it is more in the line of a continuous meander, and any value of X will have lots of values of

Y , which does not define a mathematical function. Nevertheless, we can use ARexx and the drawing features of MathVISION to create our lines. We also need to use some DO UNTIL constructs, and not just IF THEN ELSE (which MathVISION supports); so it is much easier to do this in ARexx.

Another way we can output star fractals is through a PostScript printer. The razor sharp lines of a 300 dpi printer make beautiful renditions with much higher resolution than an Amiga screen. I introduced the PostScript language controlled by ARexx in the May issue to print text files, but as demonstrated here, drawings are just as easy to do.

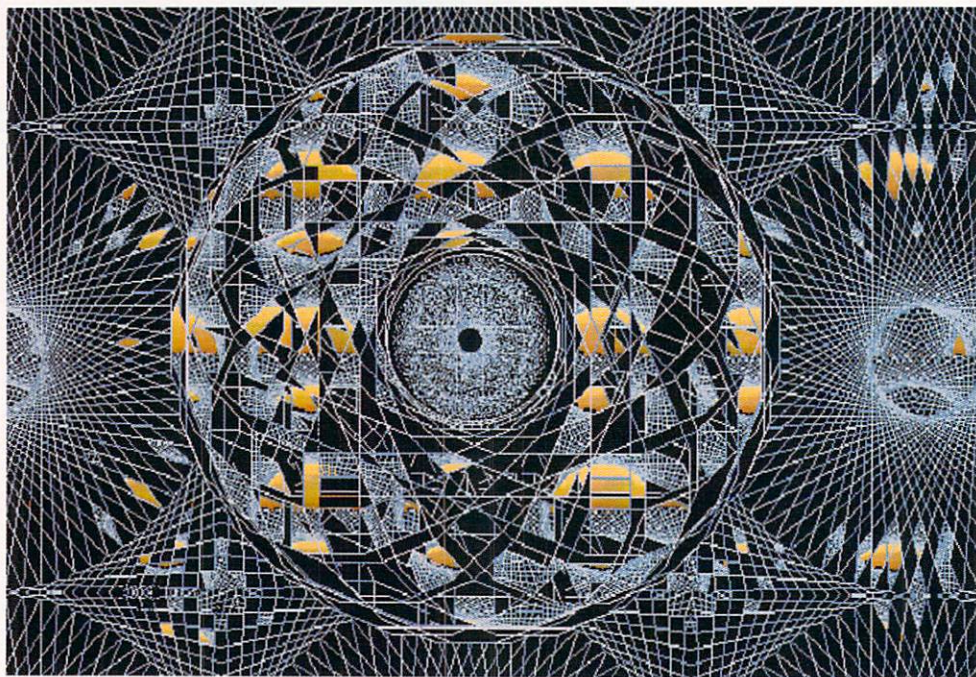
What Is a Star Fractal?

Everyone can draw a five-pointed star without lifting his or her pencil. Imagine such a star, except that on each of the five points, there is a smaller star (reduced by a factor r , such that $0 < r < 1$) attached by one of its points, and on the four available points of each of these smaller stars, still smaller (reduced by r squared) garlands of stars are attached in the same way; and the process continues to infinity. That's a fractal from which the general class of star fractals

gets its name. Obviously, if we draw such a fractal, we need to truncate the infinite regress of stars at some point, say at four levels deep. Can you demonstrate with a pencil and paper that you can draw such a fractal without lifting your pencil? We'll get our Amigas to do just that. At four levels, we would need to draw 1280 line segments! How do we analyze what happens?

One Closed Line

The star fractal is characterized by one closed line—the mathematical equivalent of not lifting your pencil. In our example Star, successive line segments always meet at the same angle $a=144$ degrees which makes the star point. If we number the 1280 line segments as 0 to 1279, and if we start at $n=0$ with a direction of angle $a=0$ (move left to right horizontally), then any line segment with an arbitrary index of n



This picture demonstrates how Star Fractals can provide the creative basis for science fiction or other fantastic, abstract illustrations.

will be at an angle of $n \cdot a$. The only thing we need to worry about is the length of the n th line segment. Is there a rule for telling us the length of the n th line segment? We need to use the "reduction factor" r as it tells us how much to shrink the line segment each time we drop one level deeper. If the first line segment has a value of 1, then the progression of lengths is 1, r , r^2 (r squared), r^3 , and r^4 (we don't wish to go deeper than 4 levels). Lets make a table to show which lengths get used when:

line length:	line segment count:	factors:
length r^4	$n=1, 2, 3, 5, 6, 7, 9, 10, 11, 13, 14, \dots$	
has 0 factors of 4		
length r^3	$n=4, 8, 12, 20, 24, 28, 36, 40, 44, 52, \dots$	
has 1 factor of 4		
length r^2	$n=16, 32, 48, 80, 96, 112, \dots$	has 2
factors of 4		
length r	$n=64, 128, 192, 320, 384, 448, \dots$	has 3 factors of 4
length 1	$n=0, 256, 512, 768, 1024, \dots$	has 4 factors of 4

The length of a given line segment with index n depends on the number of factors of 4 in n . There are five line segment lengths. The number of different lengths is called the phase p ($p=5$ in our example). The factor 4 above is in fact arbitrary. We can make this number any positive integer in the general case. We call the number 4 in the above example v , and the general case looks like this:

line length:	line segment count/factors:
length $r^{(p-1)}$	n has 0 factors of v
length $r^{(p-2)}$	n has 1 factor of v
length $r^{(p-3)}$	n has 2 factors of v
length $r^{(p-4)}$	n has 3 factors of v
length $r^{(p-5)}$	n has 4 factors of v
...	
length 1	n has $\geq (p-1)$ factors of v .

A Tough Problem with the "General Theory"

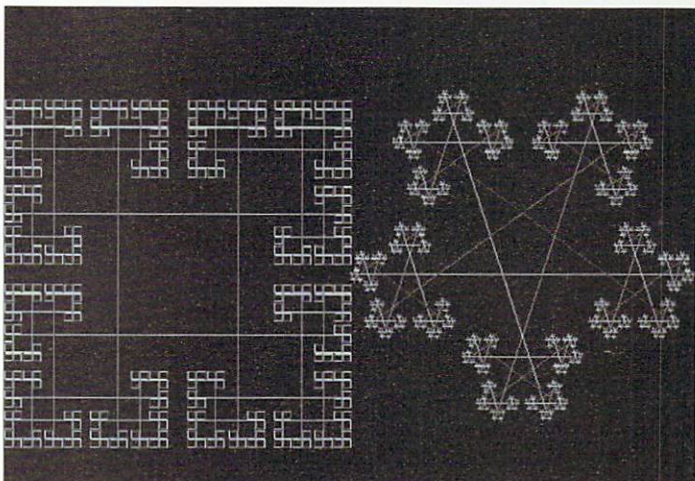
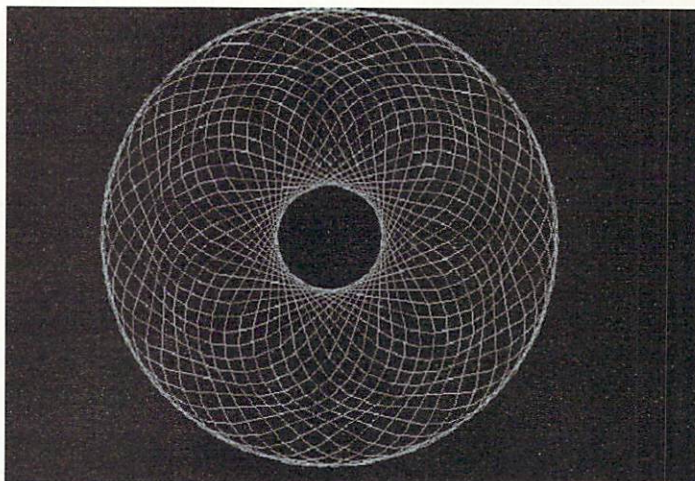
The last entry in the table indicates that for length=1, n has at least $p-1$ factors of v . The "general case" in the book cited above is only correct if, for length 1, n has exactly $p-1$ factors of v . In many of the examples I tried, I found that the "general case" alleged by the book is incorrect. The total number of line segments before the line "closes" is much larger than indicated by the suggested formula: total number of line segments equal to $[(v+1) \cdot v^{(p-1)}] - 1$. I have not derived a general theory that works for any figure, because in addition to p and v , it depends on the angle as well as the reduction factor, making a complicated general theory, especially when you get into some of the large numbers of line segments before the line closes. (In fact, some don't close; they are unbounded and go out to infinity! Others iterate many thousands of times. That's why I put in a Control C break emergency exit to the program.) Any mathematicians who can write a general formula to determine the total count, please send it to me. I'd like to see it.

Anyway, until someone makes a valid formula, I kludged the count so that the program will finish, by using a measure of closeness called "epsilon," the absolute value of the difference between the latest end-point and the starting point. Using epsilon as an addition to the actual loop count works in most cases. Because the calculations contain some rounding error, this epsilon is non zero. I picked an epsilon limit that seems to work in most cases. The epsilon measures are read out as data in case you need to adjust them, most likely to smaller values. The value of count when there are exactly $p-1$ factors v in the longest line segment is $\text{count} = (v+1)v^{(p-1)} - 1$.

If the line is not yet closed according to our epsilon factor, and n reaches count, then count is incremented until the line segment end-point is within epsilon of the starting point, and the loop terminates.

Parameters Say It All

Both of our programs take user input of phase (p), arbitrary (v), degrees (a), and reduction factor (r); and output a drawing of the star fractal associated with these parameters. Be careful not to specify too large values for p and v , or you will wait forever. Also be careful of phases and angles that make unbounded figures. In



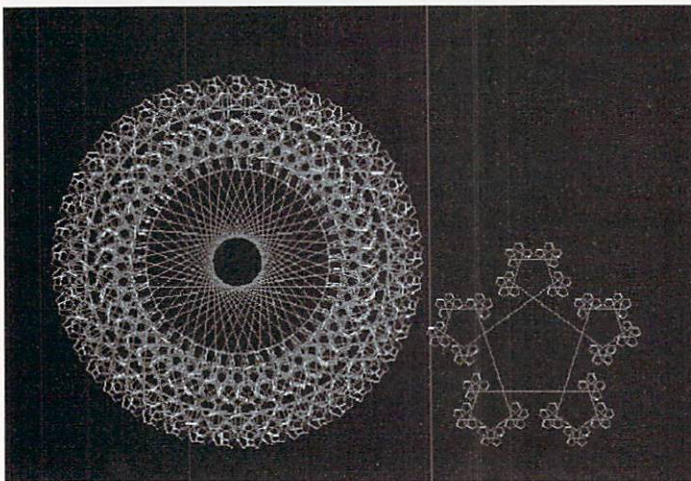
Top: $p=3$, $v=4$, $a=17$, and $r=0.35$. Note the difference if you change just r to $r=0.1$. Try cycling your images. Now do you see why cycling and mod phase is desirable? Bottom: The original STAR fractal contrasted with a file figure ($p=7$, $v=3$, $a=90$, and $r=0.47$). It's hard to believe the same algorithm produced both figures.

MathVISION, you may watch the fractal unfold with phases coordinated to the pen color. You will soon learn which values work. The star program for MathVISION is called StarMV.rexx and the star program to print star fractals on your PostScript printer is called Star.rexx. Both program allow you to scale the size of the image produced, and position it on the screen or page. Note that degrees in both programs are converted to radians first.

The Programs Explained

Star.rexx

Your PostScript printer draws the fractal. I explained how PostScript uses a postfix stack and how we OPEN the PAR: device to write PostScript commands to it in the May ARExx column. This time, we start the PostScript part by putting a "newpath" command on the stack to signal that we are starting a new drawing path. In ARExx/PostScript hybrid, "putting on the stack" is the equivalent of "writing a line to the PAR: device" with WRITELN(). In PostScript drawing, you specify a "path" for where the lines go, then a "stroke" command to fill up the line path, similar to the way we "show" text. A "showpage" command prints the actual page with all the "stroked" lines and "shown" text. After the newpath command, ARExx places the starting X,Y coordinates and a "moveto" command on the stack. Then the ARExx calculations repeatedly specify a coordinate X,Y and the PostScript command "X Y lineto" draws the next segment of our closed line to the new coordinate. The loop count and epsilon determine when to end the loop as described above. Finally a "stroke" fills the entire line unless the figure exhausts the printer's memory, in which case the ARExx



The small pentagonal fractal (scaled half-size) and the large "basket weave" fractal share identical parameters except for angle A which varies by only 0.5 degrees between figures.

program finishes, but the printer "waits" awhile and then returns to the ready state. Before the showpage command prints, we choose the line width, and the option to let ARExx print the parameter information at the top of the page using the same techniques explained in the May column.

The Fractal Computation

The Fractal Computation are the nested loops that compute the fractal bear discussion. The first loop says DO from 0 to count. However, at the end of this loop, we use an ABSolute value function for x (se) and y (ue) as a test epsilon to see whether to continue by incrementing count. The inner DO WHILE loop counts the funny cycling we saw in the tables above, insuring that the line won't be drawn until the value of f, and therefore the length of the segment, is right. The loop counter, m, is tested by division mod v—the operator // is for modular arithmetic, and computes the remainder of division by v. Of course we don't want to remain in the loop after f gets larger than p-1, so we connect the second condition to the first with the "&" (meaning "logical and"). After this loop is finished, then the new X and Y coordinates are computed. The line segment

length, reduced by r raised to the appropriate power, and high school trigonometry determine the new end-point. This is the reason we need to load the rexxmathlib.library at the start: to access the trig functions. We use some variables like "base" and scale for 72 points per inch in PostScript, and calculate epsilon used in the test to see if we need to continue counting. The remainder of the program addresses input, error checking, and output to printer or file. The actual calculation of the fractal, as is the case with fractals, is deceptively simple. The results can be surprisingly spectacular however.

StarMV.rexx

After rexxmathlib.library is loaded, we make MathVISION settings for the screen. In MathVISION, the calculation of the fractal follows the same procedure, except that on screen we need to use a different epsilon limit for how close the line gets, because we are using a different scale factor. Instead of drawing the lines with PostScript commands this program uses the F0 DRAW(X,Y,pen) function of MathVISION, feeding new X and Y and pen values at each iteration. That is why "overplot" is on: we draw many, many separate lines on the screen. The "noisy" option must be OFF; otherwise an X=0 line will be drawn. Modulo counts colors according to phase. MathVISION starts drawing where it left off, so we need to draw an invisible (color 0) line to the origin to initialize the drawing.

This program allows you to keep all values from the settings in the numerical swamp—old values or ones you manually set anew—or you may enter values one at a time at the Shell prompt. The default values for the five-pointed star fractal may be selected also. If new values are selected, then you are prompted whether or not you want to fix the pixel aspect. Refer to the April ARExx column for a technical explanation of pixel aspect. What this option does here is to insure that circles are truly round in appearance, by automatically adjusting the Y values according to the screen aspect.

ARC.rexx Fixes Pixel Aspect

The program ARC.rexx is called if you answer Yes. ARC.rexx assumes a screen aspect of .685, but you may follow the instructions in the MathVISION manual (page 34-36) to arrive at the number appropriate for your own monitor's screen aspect. If the Y range is blank, the program guesses it. A SELECT block is used to allow us to keep the endpoints of the Y range if either is zero. Otherwise, we add or subtract the midpoint of the X range, multiplied by the aspect ratio of the screen, to/from the midpoint of the Y range. This effectively scales the Y range to make circles plotted in pixels to appear round. ARC.rexx may be used alone as a handy way to adjust pixel aspect for MathVISION at any time.

In StarMV.rexx when we ask the program to use the "old" values from the numerical swamp, it parses the parameters from the Comments section. Note the use of parsing on a pattern to strip away from the line all but the number we need. Therefore, make sure to preserve the order and format of the parameters in the comment section, if you wish the program to read them properly. When you enter new parameters, they appear temporarily on line two of the Comments so that you may compare them to the old parameters on line one.

Examples

Here are some example values that may prove interesting.

p	v	a	r	Xmin	Xmax	Ymin
Ymax						
3	4	17	0.1	-0.84	1.79	-1.33
0.47						
5	4	144	0.35			
7	3	90	0.47			
2	4	144	0.38			
3	4	17	0.35	-1.0	2.21	-0.9
1.3						
2	3	277	0.35	-0.8	1.35	-0.72
0.75						
4	4	288.5	0.35	-0.6	2.03	-0.6
1.2						
4	4	288	0.35	-0.6	2.03	-0.6
1.2						
4	4	125	0.35	-0.5	1.69	-0.3
1.2						
3	5	17	0.35	-2.5	4.0	-0.45
4.0						

Listing One

```
/* ARC.rexx screen Aspect Ratio Calibration for MathVISION */
/* (c) 1992 by Merrill Callaway */
```

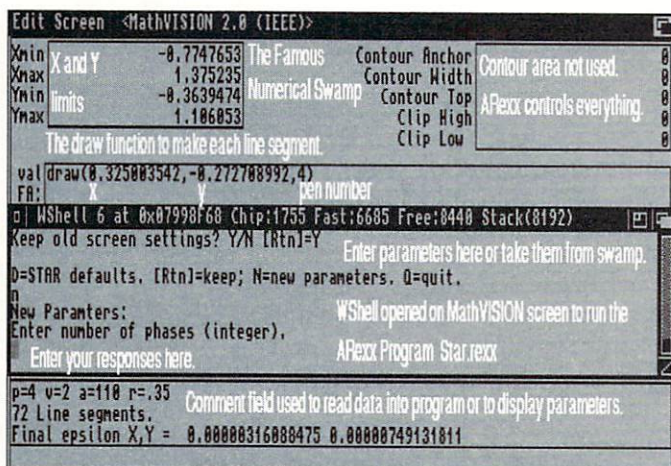
```
OPTIONS RESULTS
ADDRESS 'MathVision'
ContourScaling F
GET Xmin
xmi=RESULT
GET Xmax
xmx=RESULT
asp=.685

Y:
GET Ymin
ymi=RESULT
GET Ymax
ymx=RESULT

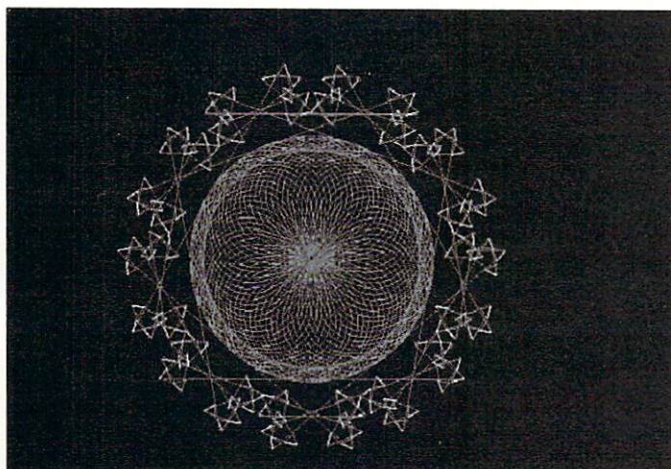
IF DATATYPE(ymi)~='NUM' | DATATYPE(ymx)~='NUM' THEN DO
  GuessYminYmax
  SIGNAL Y
END

SELECT
WHEN ymi=0 THEN DO
  newymin=0
  newymax=asp*(xmx-xmi)
END
WHEN ymx=0 THEN DO
  newymin=-asp*(xmx-xmi)
  newymax=0
END
OTHERWISE DO
  newymax=((ymx+ymi)/2)+(asp*(xmx-xmi)/2)
  newymin=((ymx+ymi)/2)-(asp*(xmx-xmi)/2)
END
END

Ymax newymax
Ymin newymin
EXIT 0
```



The MathVISION edit screen and the numerical swamp. I like to open a WShell on this screen in order to run StarMV.rexx shown. Note the formula in F0, and the ranges and comments sections.



A composite of two star fractals: the inner "basket" has parameters $p=3$, $v=5$, $a=17$, and $r=0.35$; while the outer has $p=4$, $v=4$, $a=125$, and $r=0.35$. The pictures were composited in Deluxe Paint IV.

Listing Two

```
/* Star.rexx a fractal star PostScript printer */
/* (c) 1992 by Merrill Callaway */

/* Caution: it is easy to exhaust your printer */
/* memory with infinite fractals! */
/* Press Cntrl-C to stop */

/* load proper library */
IF ~SHOW('L','rexxmathlib.library') THEN,
  CALL ADDLIB('rexxmathlib.library',0,-30,0)

SIGNAL ON BREAK_C
pi=3.141593
/* star defaults */
p=5;v=4;a=144;r=.35

SAY 'Press CONTROL C for emergency exit.'
SAY 'Use defaults for star? D=use defaults. [Rtn]=new parameters.'
PARSE UPPER PULL ans
IF ans='D' THEN SIGNAL scaling

phase:
SAY 'Enter number of phases (integer).'
PULL p
IF ~DATATYPE(p,'WHOLE') THEN SIGNAL phase

arbitrary:
SAY 'Enter arbitrary v (integer).'
PULL v
IF ~DATATYPE(v,'WHOLE') THEN SIGNAL arbitrary

degrees:
SAY 'Enter number of degrees.'
PULL a

reduce:
SAY 'Enter scale reduction factor r (0<r<1).'
PULL r
IF r<0 | r>1 THEN SIGNAL reduce
```



```

/* Scaling in PostScript: 1 inch = 72 points. */
scaling:
SAY 'Base line (inches). [Rtn]=4 in. (Default)'
PULL base
IF base='' THEN base=4
IF base>7 THEN DO
  SAY 'TOO LARGE!'
  SIGNAL scaling
END
baseline=base
base=72*base

coords:
SAY 'Start coordinates (inches) X Y [Rtn]= 2 5 (default)'
PULL xstart ystart
IF xstart='' THEN DO
  xstart=2;ystart=5
END
IF ~DATATYPE(xstart,'NUM')& ~DATATYPE(ystart,'NUM'),
  THEN SIGNAL scaling
IF xstart > 7.5 | xstart < 1 | ystart < 1 | ystart > 10,
  THEN DO
    SAY 'OUT OF BOUNDS!'
    SIGNAL coords
  END
xorig=xstart;yorig=ystart
xstart=72*xstart;ystart=72*ystart

start:
SAY 'Specify line width in points (72nds of an inch).'
SAY '[Rtn]=0,
  (smallest line width: 1 device dependent pixel).'
PARSE PULL lw
IF lw='' THEN lw=0
IF ~DATATYPE(lw,'NUM') THEN SIGNAL start

SAY 'Print Parameter Values? [Rtn]=Yes.'
PARSE PULL pval
IF pval='' THEN pval='Y'

SAY '[Rtn]=PRINT or F=send to FILE? P/F'
PARSE UPPER PULL prt
IF prt='F' THEN device='PAR:'
ELSE DO
  SAY 'Enter path/filename. [Rtn]=RAM:out (default)'
  PARSE PULL device
  IF device='' THEN device='RAM:out'
END

SAY 'Computing. Please wait...'
deg=a
a=a*pi/180
x=0;y=0
se=5;ue=5

CALL OPEN('output',device,'W')
CALL WRITELN('output','newpath')
CALL WRITELN('output',xstart ystart 'moveto')

/* Compute the fractal */
count=(v+1)*v*(p-1)-1
n=0
DO WHILE n <= count
  m=n;b=n*a;f=0
  /* do mod counting */
  DO WHILE m//v=0 & f<p-1
    f=f+1
    m=INT(m/v)
  END
  x=(x+(r**(p-f-1))*cos(b))
  y=(y+(r**(p-f-1))*sin(b))
  s=base*x-xstart
  u=base*y-ystart
  /* how close are we to start? */
  /* compute epsilon for x (se) and y (ue) */
  se=s-xstart
  ue=u-ystart
  /* write the PostScript line */
  line=s u 'lineto'
  CALL WRITELN('output',line)
  IF n=count &
    ~(ABS(se)<.09 & ABS(ue)<.09) THEN count=count+1
  n=n+1
END

SAY n 'Line segments.'

/* postscript commands and parameters */
/* device line width */
CALL WRITELN('output',lw||' setlinewidth')

/* fill in path of line */
CALL WRITELN('output','stroke')

IF pval='Y' THEN DO

```

```

/* write parameters on page */
CALL WRITELN('output',
  '/Helvetica findfont 8 scalefont setfont')
CALL WRITELN('output',
  '(p='p' v='v' degrees='deg,
  ' r='r' line segments='n+1'))')
CALL WRITELN('output','72 768 moveto show')
CALL WRITELN('output',
  '(final epsilon: se= 'ABS(se)' ue= 'ABS(ue)'))')
CALL WRITELN('output','72 758 moveto show')
CALL WRITELN('output',
  '(baseline length='baseline,
  ' in. origin at (x,y)='xorig','yorig' in.))')
CALL WRITELN('output','72 748 moveto show')
CALL WRITELN('output',
  '(linewidth='lw' points.))')
CALL WRITELN('output','72 738 moveto show')
END

/* print whole page */
CALL WRITELN('output','showpage')
IF prt='F' THEN DO
  SAY 'Print file has been sent to 'device
  SAY 'Copy print file to PAR: to print PostScript fractal.'
  END
EXIT 0

/* Emergency Exit */
BREAK_C:
SAY 'User terminated program...'
EXIT 5

```

Listing Three

```

/* StarMV.rexx a fractal star plotter for MathVision */
/* (c) 1992 by Merrill Callaway */

```

```

/*
** Use the Contour Center Option from the contour
** menu to adjust the X,Y min and max so that your
** object will be centered. You may also use the
** Analyze features, draw a tiny fractal and then
** measure it for filling the screen after you see
** its bounds. Stop the program with Ctrl-C and
** adjust the screen limits; then restart keeping
** all data if you changed the numerical swamp, or
** change the data at the program prompts.
*/

```

OPTIONS RESULTS

```

/* load proper library */
IF ~SHOW('L','rexxmathlib.library') THEN,
  CALL ADDLIB('rexxmathlib.library',0,-30,0)

SIGNAL ON BREAK_C
pi=3.141593

ADDRESS 'MathVision'
SAY 'Hit Control C for emergency stop.'
SAY 'Keep ALL Numerical Swamp settings? Y/N [Rtn]=Y'
PARSE UPPER PULL settings
IF settings='N' THEN DO
  Get Comment1
  param=RESULT
  PARSE VAR param 'p=' p ' v=' v ' a=' a ' r=' r .
  SIGNAL start
END

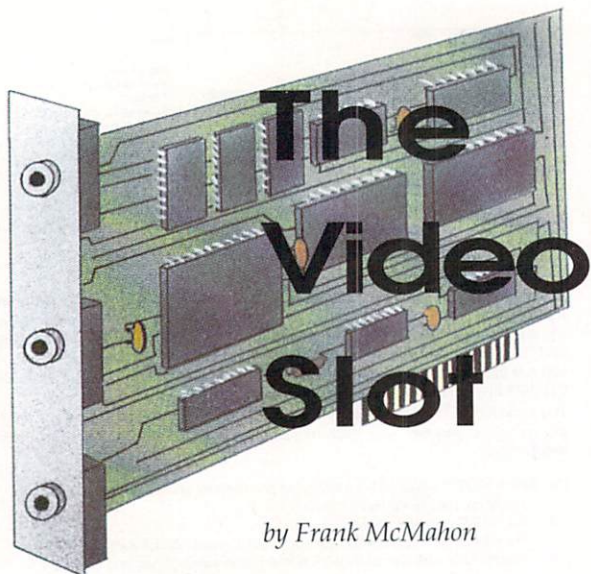
/* MathVISION settings */
Hires T
Lace T
Depth 4
Width 640
Height 400
ChangeScreen
EditScreenToFront

```

```

SAY 'Enter XMin XMax YMin YMax.'
SAY '[Rtn]=keep Numerical Swamp X Y range. S=star default range.'
PARSE UPPER PULL xmin xmax ymin ymax .

```

by Frank McMahon

Does your monitor seem a little fuzzy lately? This month we'll take a look at a possible remedy as well as an update on the hot new 3-D program *Caligari 2.0*.

Vidia's Video Calibration Set

Vidia is a company that has published a steady stream of reference material for the Amiga, including guides to *DeluxePaint IV* and the Amiga's various graphics modes. Their latest is called the *Video Calibration Set* and its sole aim is to allow the average user to display various test patterns with the Amiga and make sure his or her monitor is up to specifications. The title of this package is a little misleading because the software doesn't actually do any calibrating. It merely points out where there may be a problem in your monitor,

video signal, or camera. There is a total of 41 test images that come on one disk, along with four plastic-encased test pattern sheets.

All the on-disk images can be easily displayed with the included icon menu or can be loaded separately with a program such as *Art Department Professional* or *DeluxePaint IV*. The first category of images is the "Color" set. In addition to a few color bar sets there is also a HAM-mode image which demonstrates colors too saturated for NTSC output as opposed to a legal palette. A grid for demonstrating NTSC color transitions is also included. Next is a group labeled "Contrast." These are used primarily for demonstrating the luminance values of your monitor. The image "All Contrast" contains numerous checkered patterns for displaying gradual brightness changes. The "Convergence" category is used to align color guns in an RGB monitor. RGB stands for Red-Green-Blue, meaning that three completely separate electronic beams make up the Amiga's screen. This gives computer monitors unequaled color clarity and definition. If one of the beams is aiming a little off, a red, blue, or green "shadow" on a pure white circle may appear. For example, a worst-case scenario is represented by some older rear-view projection TVs whose beams were always "drifting."

"Overscan" is a group of images to test Amiga software dimensions as well as checking borders on videotape. One image that should be included is a "safe-area" screen which basically has a box centered in the middle of an overscan screen. Anything outside of the box could possibly get cut off on some televisions or monitors. "Phosphor" images are for locating problems such as phosphor burns and defects. "RGB Ladders" are for displaying problems in color jumps. There are two sets, one for RGB monitors and another group designed for NTSC, which do not advance past the color setting of 12 (from 15). Two images for testing flicker-fixers are in the drawer called "Miscellaneous." Also included in this package are three test patterns. They are used for testing a video camera's

Comparison of
NTSC colors
that are illegal
(upper right)
and legal
(lower left).



aspect ratio, line resolution, contrast, and interlace coherence. Rounding out the package is a set of two rulers for measuring the vertical and horizontal size of the Amiga screen for Commodore's 1080/1084 monitors.

I have a rather mixed reaction to this set of calibration tools. It's certainly interesting for home users to check the alignment of their RGB guns and ladders, but how do they go about fixing them? There are no convergence controls on most monitors—at least not on the outside—so there is not much a user can do aside from taking the monitor to a repair shop. Contrast and brightness images are nice to have, but those controls have always been a matter of personal preference. As a professional user, I may get more use out of these images than the average owner since I would much prefer calibrating to this set than rolling a tape of bars as far as RGB adjustment is concerned. But what about testing NTSC? The assumption is that a genlock is used to get these images to video, but then there lies a problem. My experience with genlocks has shown that each model is so varied in quality, brightness, saturation, and phase that I can't recommend adjusting a multipurpose video monitor to these images unless your genlock unit is near the high-end of the cost spectrum. As for things I'd like to see, a blue-only set of bars would be handy in those instances when a waveform/vectorscope is not available—blue-only is void of chroma and goes by the black level of the colorbars. I'd also like to see the manual go into a little more depth about the various testing methods.

The final verdict lies in what level of video you are currently in. The video camera test sheets are adequate for professional and home use; however, the lack of resolution markings on the circle pattern chart seems to defeat its intended purpose. However, a separate resolution chart is included and is professionally arranged. The software is excellent for adjusting RGB monitors if your monitor has separate gun adjustments—indispensable for the high-end user but not too useful for most Amiga owners. The NTSC tests should not really be used to adjust monitors but more to adjust your genlock—if that is possible—or to display your genlock's inadequacies. To sum it up: the more options your equipment has for calibration, the more you need Vidia's Video Calibration Set.

Caligari 2.0 Maps and Fonts

Caligari 2.0 (actually 2.1) users may have a problem loading HAM or IFF files as texture maps because of one basic reason: you can't. It is not an option with the current version. An Octree spokesperson said it will definitely be in a future version. For now, the only import allowed is Rendition format files. Rendition is an advanced file format developed by Octree to support 24/32-bit color images. While the *Caligari 2.0* documentation points to *Art*

Department Pro to convert files to Rendition format, the *Art Department* actually doesn't support Rendition in its current released version. Only with the add-on *AdPro Conversion* pack (\$90) is a loader/saver available. This package also includes drivers for the Targa format, which is also supported by *Caligari 2.0*.

Although I have used the *LightWave* version extensively, this week I received a copy of Unili Graphic's *Broadcast Fonts 3D* in a new version specifically for use with all versions of *Caligari*. Not only do the fonts look spectacular rendered, but this version is an improvement over existing versions for *Imagine* and *LightWave*. "AQPoints" is Unili Graphics' new point system which maintains proper angle thresholds during curve generation—more points on the curves and less points on the straightaways. The result is truly professional and excellent for any video work. Unili also includes a special offer for *Caligari Broadcast Fonts 3D* owners. If you send them an animation, on videotape, using their fonts to animate their



Main control screen from Vidia's Video Calibration Set.

logo, you'll get a bonus font set for free!

If you have not investigated *Caligari 2.0*, definitely check it out—especially if a Video Toaster is out of your reach. *Caligari 2.0*, along with *DCTV*, is about as close to *LightWave 3D* as you can get without remortgaging the house. While, admittedly, *LightWave* has more features, *Caligari's* spline animation tools, powerful shading techniques, and real-time 3-D workspace, which aside from *LightWave* no other 3-D program has, gives Amiga users much more bang for the buck. It's also the only 3-D program I would recommend to entry-level animators. That about wraps it up for this month.

•AC•

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Background Art to Go

Materials Texture Library and Our Wedding

by Frank McMahon

The only thing more important than an Amiga graphic screen is the background image. With the vast array of fonts (as well as colored fonts) available commercially and in the public domain, title screens are rather easy to compose. But a title with a stark black background does little to convey an image or mood. Two new image data packages, *Materials Texture Library Volume 2 - Tiles* by MicroSearch and *Our Wedding* by Digital Graphics Library remedy the situation in slightly differing ways. Both provide an ample set of highly detailed background screens, so if your Amiga production involves weddings, title pages, or 3-D imaging these packages may be just what you've been looking for.

Here Comes the Bride

Most wedding graphic packages are presented in hi-res 16-color format. *Our Wedding* differs from the norm in that its images are hi-res 24-bit overscan (736x480); 24-bit color resolution dips into a palette of 16 million hues as opposed to just 16 colors, leading to beautiful shading and blends not possible otherwise. Owners of the Video Toaster, Impact Vision24,

Firecracker, DCTV, Colorburst, Ham-E, and other hi-color units can take direct advantage of this seven-disk set of 25 images. Other users of programs such as *DeluxePaint IV* can convert to lower resolutions and colors using conversion programs such as *Art Department* by ASDG Incorporated.

The wedding screens in this particular set seem to be broken up into three distinct, non-similar styles. First is 3-D, where screens are black with various 3-D images such as wedding rings, bells, stars and crosses. A few have a set of roses and two have a beautiful 3-D "Our Wedding" logo. The second set are embossed images which look like they are carved out of a bronze plate. Embossed screens of a wedding cake, a couple at the altar, and several embossed versions of the 3-D images are included. Finally rounding out the set is a group of pastel colored, pencil-like sketches of the bride, church steeple, bouquet, a rose, bells, and bells with ribbons. All screens can be cut and pasted, so you could take a 3-D pair of wedding rings and paste them into an embossed background before adding text. Also included in the package is a sparse page of

hints and ideas as well as a handy print-out of all included graphics for reference purposes.

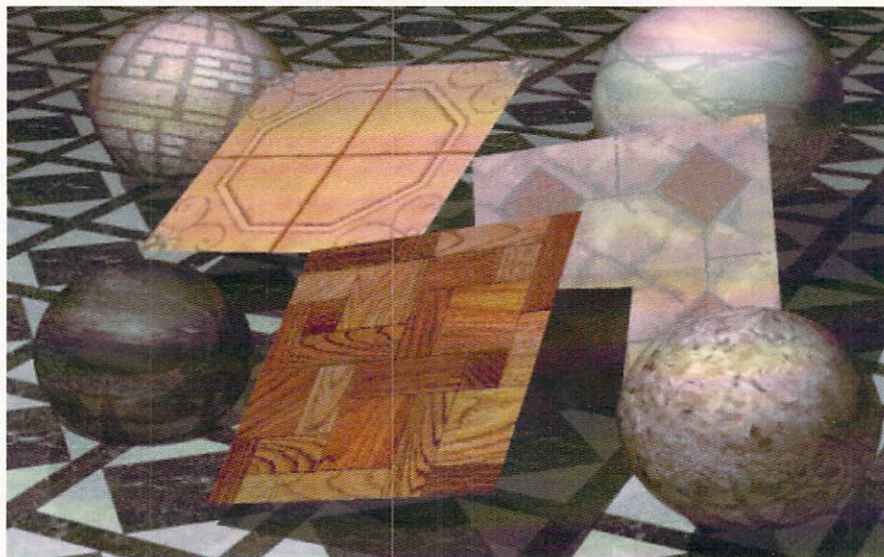
As for the quality of the different styles, the 3-D images are gold, shiny, and very classy—sure to enhance any wedding production. The embossed screens leave a little to be desired; some are hard to recognize especially after transferring them to video and going down a generation or two. The fact that some are repeats of the 3-D pics and that an embossed effect can be created with other Amiga software packages leaves a weak link in a professional package, although the images are certainly usable. The pastel prints are beautiful, and the detail and light graphic touch are inspiring. All images look great on an RGB screen, and colors are legally within the NTSC bandwidth, even the red roses, when moved over to video. If you videotape weddings and have an Amiga in your production studio, *Our Wedding* is a great choice.

Checkered Past

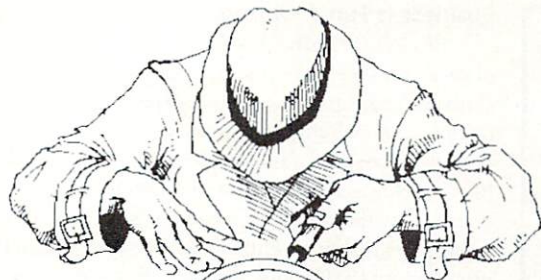
Amiga 3-D images have had a checkered past, rather an overabundance of *checkered floors*. Early in my rendering days, I fell prey to the seemingly harmless charm of that great perspective enhancer. Texture mapping has thankfully steam-rolled over the old floors, bringing us to our next graphic set, *Materials Texture Library - Volume 2: Tiles*. Not to be limited to 3-D backgrounds and floors, this five-disk set of 20 480 x 480 4096 color HAM images can be used for just about anything, including painting, brushes, and animations.

Because of the dimensions of the images, some scaling—again, here's where the Art Department comes in handy—may be necessary, especially if you intend to use the images for backgrounds in a HAM program such as *Deluxe Paint IV* or *SpectraColor*. The reason is that the width of the images in this set is 480 and the maximum width in HAM overscan would be about 368 pixels across. The reason for the 480 x 480 dimensions is to get the highest color fidelity at the best HAM resolution as well as remain symmetrical for 3-D texture mapping where an image has to repeat continuously across a surface. Shrinking these images is not a problem for most programs and it's even recommended before mapping them onto 3-D objects. Since each map must be in memory during rendering, reducing the size can be very helpful.

Also there is no sense in mapping a 480 x 480 pixel tile on a small object that will take up barely 100 pixels in the final 3-D image. The screen shot that accompanies this article contains eight of the textures rendered in 640 x 400 24-bit mode using Impulse Inc.'s *Imagine 3-D* program. I reduced each texture to half of its original size (240 x 240) and still could have reduced each further without a loss of detail in the final rendering. Plus, even though the tile



Eight Tile textures from "Material Texture Library" rendered in 24-bit 640 x 400 resolution by author.



ROOMERS

by The Bandito

[These statements and projections presented in "Roomers" are rumors in the purest sense. The bits of information are gathered by a third-party source from whispers inside the industry. At press time, these rumors remain unconfirmed and are printed for entertainment value only. Accordingly, the staff and associates of Amazing Computing cannot be held responsible for the reports made in this column.]

Atari — Game Over?

It's been a while since the Bandito took a potshot at Atari. Remember those days a few years ago when the Atari ST and the Amiga were engaged in a heated war of words? Seems like ancient history, doesn't it? Well, Atari has taken a few too many shots below the waterline to survive. Here's the latest round of bad news: Atari's sales are dropping faster than a politician's credibility. Atari's sales last year were a meager \$285 million, compared to the previous year at \$411 million. Down the tubes fast, with no new products in sight. The Bandito may not have this one to kick around any more. At this rate, the Bandito figures that Atari has maybe two years of life left before they throw in the towel. Say, do you think old Jack Tramiel might be looking for a job soon? Maybe Commodore will hire him to sell Amigas to the mass market. *Not!*

Sales Down, Salaries Up

Well, the reports are in for the computer manufacturers 1991 performance. And Commodore isn't doing too badly, overall; it's the tenth largest PC maker at \$1 billion in sales. The Big C is right behind Tandy, whose PC sales were \$1.1 billion. Sad to think that more Tandys were sold than Amigas, isn't it?

While Commodore was improving their sales a bit, the executives were cleaning up. Mehdi Ali was #3 best paid executive in

the computer business; his pay was a cool \$2.4 million, up 20% over last year. Irving Gould was a mere 7th with only \$1.75 million, same as last year. (How does the poor man manage to squeak by, without even a cost-of-living expense?) Henri Rubin was #44 at \$709,409, a 63% increase. (This huge increase must be due to all those wonderful new machines and new technologies that Commodore introduced last year, right?) Ron Alexander is #135 at \$293,225. (He's the guy in charge of finances.) Just in case you thought Irv's salary was too low, don't be too sorry for him. After all, Irving also holds nearly \$95 million worth of Commodore stock (#17 on the list of biggest stockholders in the computer business). And Mehdi Ali holds \$7.9 million in stock (#78), up 30% over last year. He must have gotten quite a few more options. *(This information was published in the April 6th issue of Computer Reseller.—Ed.)*

The Bandito would like to ask: Why does the #10 company pay the #3 salary? There seems to be a mismatch here. Now that executive compensation is becoming a big issue this election year, perhaps Commodore's stockholders will start asking some questions.

Meanwhile, Commodore's had an interesting third quarter performance. Their earnings are up to a little over \$4.1 million on sales of \$194.6 million for the quarter ended March 30th. This is compared to \$1.4 million earnings on sales of \$246.3 million in the same quarter last year. So they've tripled their income while sales have dropped by 20%. Can you say layoffs?

The astute reader is asking right now, "Why are sales so low?" Primarily because Commodore discontinued the low-end MS-DOS computers, and C64 sales were down in Europe (they hardly exist in the U.S. any more). On the other hand, Amiga sales were

up 10% overall. Commodore's not talking about it, but the Bandito hears that most of that increase in Amiga sales came from overseas; U.S. sales were flat or even lower than the previous year.

For the nine months ended March 31, 1992, Commodore had net income of \$49.5 million on sales of \$770.3 million. The previous year, Big C had net income of \$44.9 million on sales of \$830.7 million in the prior year. (Of course, Commodore did have some extraordinary charges the previous year to account for the low income numbers.) The overall trend, from the Bandito's point of view, is not encouraging. It's good that Commodore is dropping unprofitable product lines and reducing overhead, but they haven't replaced those lost sales with anything else. Perhaps the new Amiga line will do the trick; but Commodore will have to spend heavily on marketing in this country to make that happen here.

Here's what Irving Gould, the chairman and CEO of Commodore had to say:

"Revenues and profitability for the quarter were adversely impacted by the weak global economic environment. However, we are encouraged by the continued growth in the Amiga and Professional PC lines. Furthermore, Commodore's range of products has been enhanced with the recent introduction of the Amiga 600 and 600HD, a new line of consumer products which have been well received in the marketplace." Amiga 600? Not in our marketplace, Irving. And no word from Commodore when or if the A600 will ever be introduced in this country.

World Of Amiga

The big news at WOA was that there was no big news. Many industry insiders had expected Commodore to make an announcement concerning the A500+, or perhaps the A600, or maybe even some

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comments about the direction of the Amiga product line. Nothing. Nada. Zip. This is getting ridiculous, sports fans. Sure, we know that Commodore doesn't want to possibly hurt sales by talking about new technology too far in advance (the Osborne syndrome). But take a look at every other major computer manufacturer. They don't publish their product schedules in advance, but they do make public statements that very specifically spell out the directions of their product lines. The most we get from official Commodore statements is that they're working on something, but no data as to what, where, how, or when. The Bandito offers a clue to Commodore: this silence is hurting sales. Potential Amiga buyers want to know that the features they're looking for will be available in the future. They want to know about upgrade paths. Will current Amigas be upgradable to Commodore's new graphics standards? (Of course, it would be nice if Commodore would even acknowledge the fact that they *have* new graphics standards on the way).

Fortunately, the third party developers aren't as shy as Big C. For starters, GVP was showing several exciting works in progress, including their combination fax/voice mail card, which is just the kind of product that makes the Amiga's true multitasking so tremendous an advantage. And for those of you who are graphics hungry, GVP is working on a 8/24-bit daughterboard for their accelerator combo boards. Yes, they've even figured out how to get your Workbench and Workbench apps to run in that mode. Which is pretty darned cool. Say, do you think Commodore could ever manage something like that?

Business Is Fun & Games

Electronic Arts has been riding a wave of success following its efforts in the cartridge game market. Sales are expected to be close to \$150 million for fiscal 1991; they recently announced a two-for-one stock split (their stock was up past \$50 a share at one point). Now they've set up a new division to create CD-ROM titles; but, the Bandito hears, probably not CDTV titles. Instead, you'll see Sega CD titles and maybe MPC titles. Too bad; wouldn't it be neat to have a CDTV version of *DeluxePaint*, with the world's largest collection of clip art? Yeah, but then they'd have to get a better file requester, wouldn't they? Supposedly, EA is still thinking about doing a new version of *Deluxe Music Construction Set*, but they have yet to find a programmer for the project. Too bad;

the Bandito doesn't exactly expect great marketing decisions from a company that keeps raising and lowering its prices apparently at random.

Commodore's New Ads

On the other hand, somebody in Commodore's marketing department has started to get aggressive with their advertising. The latest print ad—spotted in some of the staunchest IBM trade rags—features the provocative headline: "Nothing Will Sell You On Commodore Multimedia Like A Few Minutes With Apple Or IBM." The Bandito hasn't heard any response from Apple or IBM yet... do you think they noticed? Whether or not they have, the Bandito is pleased to see this kind of ad for Amigas. Who knows what might happen next... a slick TV ad campaign? The Bandito has heard that some rather nifty TV ads are in the works, and maybe we'll even get to see them this fall. You can bet Apple will have some TV ads for Christmas; why not Commodore?

You know, it's rather strange that unlike any brand of PC clones you care to name, both Commodore and Apple owners have a very powerful brand loyalty to their favorite computers. The difference between the two companies is that Apple understands this loyalty and has made much use of it to sell more computers. Commodore could do alot more. Perhaps someday Commodore will realize what terrific salespeople it already has, waiting to be discovered: the happy Amiga owner. If Commodore can ever unleash that power, the future of the Amiga is ensured.

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that's one program that could really use a new version. Imagine what it would be like to have DMCS on a CDTV disc, with 500 megabytes of songs...

Retail Madness

Commodore is still making some strange moves in the retail channels. The latest that the Bandito has heard about: The Big C has told its authorized dealers not to sell NewTek's Video Toaster workstation alongside Amiga computers. Now wait a minute; the Bandito thought that Commodore sells A2000's to NewTek, right? So doesn't Commodore make its money either way? This decision has already resulted in at least one of Commodore's all-too-few retailers dropping the Amiga line in favor of the Toaster workstation. Seems to the Bandito that this new policy might encourage more dealers to follow suit. Of course,

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Do You Want Your CDTV?

The Bandito checks in with a look at where CDTV is headed. Of course, it's no news to you that CDTV sales haven't set the world on fire yet, with a mere 30,000 units sold by the end of 1991. Still, Commodore is still hopeful. But development of CDTV titles is lagging from its former pace, primarily because Commodore isn't spending money on development. And there's not enough sales potential to interest developers in spending their own money to develop original titles for CDTV. Heck, Commodore's not even getting all of those MPC and Mac CD-ROM titles ported over to CDTV, which they should be. And where's the CDTV advertising push? Has Commodore given up? Or are they just waiting until they finally add the DCTV display mode and perhaps an MPEG board to really get out there and push? Or maybe it's the CDTV redesign due out this fall that will trigger a real push. The Bandito bets on the last item — particularly since the redesign will reduce the manufacturing cost, so that Commodore can make a good profit at a \$500 price point (which is what they're shooting for at Christmastime).

There's the possibility of a big CDTV boost this year when Commodore ships the CD-ROM drive for Amigas, thus creating a larger market for CDTV titles. Of course, that depends on how many CD-ROM drives Commodore sells. But it should be a reasonable number, since there's already a lot of software. Every Amiga user group will want one so they can get the Fred Fish CD-ROM. And any Amiga owner with kids will want a CD-ROM drive to take advantage of the really fun educational titles available. It's just too bad that you can't put that CD-ROM drive into the A2000. Seems to the Bandito

that 5.25" drive bay is just made for CD-ROM. Oh, well, perhaps next year.

But while Commodore fiddles with CDTV hardware, there's a burning CDTV software issue that hasn't been addressed. The Bandito thinks that CDTV software should really make all graphics and text accessible, especially for information titles (like encyclopedias) and particularly because CDTV is now being marketed as a computer. It's really useless to have to retype text, or use a screen capture program to get graphics (if you can; many programs won't allow that to happen).

So how does the competition look? Still anemic. CD-I sales are still pathetic, reaching the staggering total of about 3,000 units so far. The MPC is still being heavily touted, but not that many people are buying them (or

Photographs

The **Vidia Image Library** contains hundreds of postcard-quality, digital photographs for video, print, and multimedia. Multiple formats available; all with unlimited usage rights.

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the upgrade kits for PC's). Sega's CD-ROM unit will come out this fall, but it remains to be seen how well it will sell. Right now, there's not much good competition for CDTV, but next year's going to be a lot rougher.

News Across The Big Ditch

The Atari ST is dying rapidly in Europe, and the PC is growing equally swiftly. Amiga sales continue to show growth, but if the present trends continue the Amiga may lose its number one spot in European entertainment software sales in another year or so. Meanwhile, though, game companies continue to support the Amiga although perhaps three-quarters of the sales come from the U.K. and Germany rather than from North America.

Perhaps the bigger dangers to the Amiga market in Europe are the 16-bit videogame consoles, which are starting to take off. 85% of Amigas in Europe are used for entertainment. The Genesis and the SNES provide much the same entertainment experience for less money, and price is very important in the U.K. and Germany. Perhaps this imminent danger is one of the reasons behind Commodore's introduction of the A500+ and the A600 in Europe; those two models take the existing A500 and push it toward the high end and the low end. The A600 could conceivably compete pricewise with the Genesis and the SNES, down in the \$200 range.

And of course, the A600 is designed around the cartridge idea. Commodore might be able to get software companies to deliver games on Flash ROM cards instead of on disk, if enough A600's can be sold. And of course CDTV is Commodore's answer to the eventual introduction of a Genesis CD-ROM and a SNES CD-ROM.

However, the Bandito isn't so sure about this plan. Both Sega and Nintendo have much bigger and better marketing than Commodore. The next few years will be crucial to the long-term success of Commodore and of the Amiga.

Without a faster processor, better graphics, better sounds, how can the Amiga compete even on the low end? Gould shows just how out of touch he is by saying that low-end Amigas don't need faster CPU's.

Does Gould use an Amiga every day, or even once a week? Somehow, the Bandito doesn't think so.

Apple Keeps Trying

Apple is readying a shot at the consumer market for Christmas. They remember the glory days when the Apple II was a popular piece of consumer electronics, and they keep trying to figure out how the Macintosh can do that, too. Past attempts haven't been too successful, but Apple is learning from their mistakes. Here's their latest idea: a Macintosh Classic II bundle. It's got a black and white screen, but it does have a 16 MHz 68030, 4MB of RAM, and one floppy. The OS and applications are in a ROM slot so the machine will boot without a hard drive or a floppy; you can actually use it as a single-floppy machine. The bundle includes the 360-dpi inkjet printer Apple makes, all for under \$1000 list price. It might even have a color monitor next year, if it goes over well. Of course, this baby isn't really upgradable, but it might be tempting for students or home use.

TBC Or Not TBC

Action on the video front continues at full speed. Following the success of the DPS Personal TBC card, a slew of other manufacturers have brought out similar devices. A TBC (Time Base Corrector) is crucial to professional video; without it, you can't use a VCR as an input for the Video Toaster, for example. These beasts used to cost many thousands of dollars, housed in very large rackmount style boxes. Now the wonders of modern electronics (and marketing) brings these devices right inside your Amiga on a single card.

Let's see, we have the DPS Personal TBC II for \$995, which now includes color-processing controls in software; Digital Creation's Kitchen Sync, an integrated dual TBC for \$1895 with full proc amp controls; the \$1,050 TBCard from I.Den, with an optional set of external proc amp controls for \$195; The \$895 TBC-PCB from Prime Image with optional remote proc amp for \$250; and the Novamate from Nova for \$995. Plus the DPS Personal Vectorscope, which gives you a professional vectorscope display on your Amiga screen for only \$995. This baby multi-tasks with the Toaster software, so you can switch over and correct your waveforms any time you like.

Unfortunately, all of this video action seems to be happening at the high end of the market. The Bandito supposes that's no surprise; there's more profit in each unit. Still, it would be nice to see more things like

DCTV: relatively inexpensive devices that produce cool results. How about making a really good low-cost genlock? You know, something like a SuperGen, only priced around \$250. Aren't all those chips getting cheaper? How about a low-cost unit designed to put video in a window on the Workbench, like GVP's Impact, only price it at less than \$500? That would enable you to have a visual editing system right on the Workbench without spending an arm and a leg. Oh, yes, do it without taking up the video slot, will you? Seems like everybody wants to use that slot these days. Maybe Commodore should put two or three video slots in the next Amigas.

R.I.P. .info

One of the last remaining Amiga magazines in the U.S., *.info* magazine, has left the market with its April issue. Apparently, there's just not enough advertising going around to support that many Amiga magazines. So they've shut their doors and moved on to other things. The Bandito is saddened to see the competition reduced, and hopes publishers Mark and Benn do well in whatever they do next. At last report, Benn is still looking for a white knight to provide financing and rescue the magazine, but chances are slim. You know, maybe this wouldn't have happened if Commodore did a little more advertising in the magazines that support it so strongly. But there's no use crying over spilled ink.

PSST!

Do you know of any rumors, gossip, scuttlebut, or just plain dirt? If so, be a professional tattle-tale and pass these tidbits on to:

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P.O. Box 2140
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•AC•

—BACKGROUNDS continued from p. 74

screens are only HAM mode, with a maximum of 4096 colors, they will render reflections, such as the spheres, and various attributes at full 24-bit resolution.

The set includes various digitized tile images in marble, wood, brick, stone, floral, and other designs. Nearly every one of the 20 images is repeatable—we'll they are tiles—so mapping them across a 3-D floor does not pose a problem. Special note must go to the excellent manual. The 20 or so pages are filled with helpful information. Seven pages with illustrations are devoted to step-by-step overviews on texture mapping using both *Turbo Silver* and *Imagine*. There's a section also on converting the images to 16 or fewer colors using the Art Department, along with black and white photos of all the included tile styles. A manual was the last thing I'd expect to find in a texture set, and even though the tutorials stick to the company's favorite products rather than a complete overview of all 3-D programs that support mapping, the inclusion of this material sets a high standard of commitment that should be met by similar image sets.

So how do the tiles look? *Great!* There is not one dud in the entire set. Users of 3-D programs such as *Lightwave 3D*, *Draw-4D Pro*, *Real 3D*, and of course *Impulse's* software will get tons of mileage from this set—a set made even more attractive by its modest price. Although it takes a little more work to convert them, these tile textures also make excellent brushes for painting and video work, especially when used with *Deluxe Paint IV's* "perspective" mode, even better in 24-bit paint programs such as those included with the *Firecracker 24 board*, *Colorburst*, and *Impact Vision*. Although "The Wedding" and "Materials Texture Library - Volume 2: Tiles" may have separate audiences, they both rate very high marks for image quality and would make an excellent choice for anyone needing supplemental imagery.

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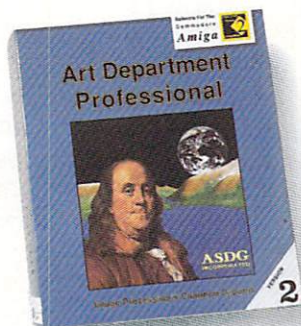
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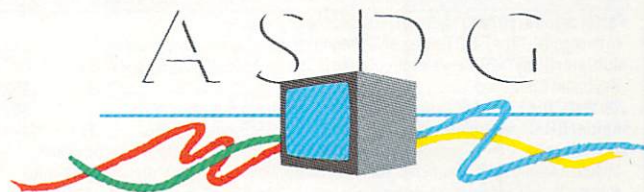
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HOT TIPS

Champions of Krynn, Death Knights of Krynn

(by Strategic Simulations Inc.)

When playing computer role playing games that allow the player to save under various games or letters, you can duplicate all of your artifact items (girdle of strength, Dragon lances). Heroes become Superheroes. To get five dragon lances, save the game to letter A. Do not exit Workbench. Save again to letter B. All your items have been doubled. To get them, remove a person from your party in game B. This person should be strong, in case you want to encumber him/her with many magical items. After removing character, reboot or exit to DOS and load game A.

Remove a person from this party with a different name and add the character you removed from party B to party A. Remove the character from party B and now add the person you removed from Party A to make room for the gift barrier. You now have the original group, but with twice the great items. Repeat to double the items again. To avoid confusion with characters having the same name, create a character and call him 'magic items' or something along that line. This tip takes some doing, but it's worth it.

(Courtesy of Robert Stoffel, West Bend, WI)

Elf (by Electronic Arts / Ocean)

Type CHEAT on any of the talking screens. When you do this, you will be told to type CHOROPOO while playing. This results in a reward of 99 pets and restores your energy level.

(Courtesy of Steve Lewis, League City, TX)

Killing Cloud (by Konami)

Boost your supplies by typing 1KILLING as a mission code. You will then be given 28 PUPS and 28 NETS.

(Courtesy of Nicholas Desson, Orleans, Ontario, Canada)

Congratulations

Robert is the winner of *OUT OF THIS WORLD*, the game shown in last issue's column. Congratulations, Robert! *The name of the winner will be published in next month's issue.*

To enter, send in your HOT TIPS on your Amiga games to:

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This month's prize:

SimAnt by Maxis

DIVERSIONS

Castles

by Rich Mataka

The Middle Ages are finally ending. The age of enlightenment is upon the land. However, our subjects have been complaining about the Viking raids that have been occurring more frequently along the coasts. One of our lords has been on the mainland studying a new type of building design called a Castle. This is a great wall of stone built for protection. If we were to build these Castles whenever we moved into new territories, we could control the surrounding lands. We shall plan on invading the Celtic lands and build our Castles to protect our subjects and defend against any armies who try to stop us.

This is the simple concept behind *Castles*, but mastering the game strategy is not. After the initial screen, you are presented with an option screen on which you can set up your game selections. On this screen you can choose the real world or a fantasy world in which to play. In the real world there are normal adversaries; whereas, in the fantasy world you will be battling ogres and dealing with magic. Also, in this screen you choose the difficulty level. There are four levels of increasing difficulty in the game; they are Peasant, Duke, Prince, and King. Each level contains different types of challenges. You must balance the treasury, keep your workers happy, keep your servants loyal, and squash rebellions. The differences in levels of difficulty are in the amount of money with which you start the game, the amount of taxes you can collect, and the state of your relations with other nobilities that you encounter in the game. When you are ready to try the King difficulty level, you are in for a very challenging game.

Castles can be installed on a hard drive and comes with a 60-page manual. There is an inconsistency between the manual and the game that could cause some confusion. The manual states that there are three levels of Campaigns when playing at the Duke, Prince, or King difficulty levels. However, a call to Interplay verified that the information in the manual is incorrect. There are only two Campaign levels in the Amiga version—the Single Castle or the Eight-Castle Campaign. Interplay advised that from their research very few ever played the Three-Castle Campaign and they decided to delete this option from the game. In no way does this change distract from the game's play.

Finally, on this option screen you can place your name as the lord of the game and name the Castle that will be built. Once all of these decisions have been completed, select "DONE" at the bottom of the screen. You are now a Medieval Lord attempting to build his first Castle. If you have selected the Peasant difficulty level, you will see the outline of a Castle presented on the screen. At the other difficulty levels, you must design your own castle from scratch, and this means choosing the correct types and mixture of Towers, Walls, and Gates. This is selected from the game's Main

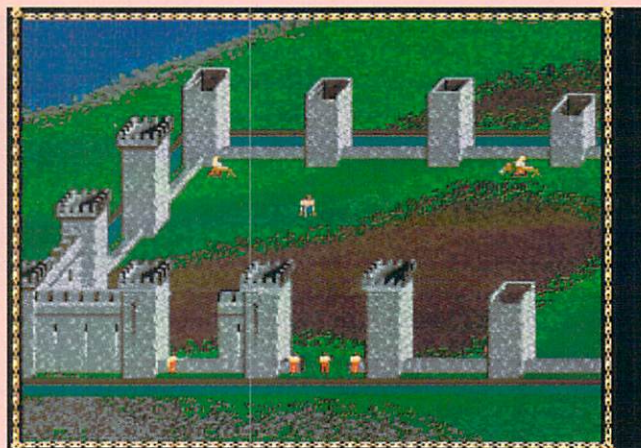
Menu. All activity within the game occurs from this Main Menu. The choices that you can make at this point are Design, Labor, Taxes, Military, Food, and Options.

Under Options, you can Save or Load a game, change the game's speed of operation, gain counsel from your trusted adviser in time of difficulty, or just quit the game. Be careful about the counsel given by your adviser, as some may be more interested in their own power than in helping you establish your realm. This is especially true at the higher difficulty levels. At any point during the simulation, you can save the game and pick up right where you left off.

Playing *Castles* is a pleasant experience. Decisions that are made within the game have a cause-and-effect action. For example, let us say that you have designed your Castle and have allocated your budget. Now you must hire your laborers and military personnel. These people must be paid. You can set the amount that each type of laborer or military person is paid. You must also decide on the number and types of laborers or military personnel to hire. You do not have an unlimited treasury so you must spend wisely. Even though you receive an annual tax every year, it's easy to overspend. If you're going to be a big spender, you must decide either

to raise taxes or levy a tax during a certain month to cover additional expenses. If you raise taxes too high, you will become known as a tyrant and your people may rebel. However, if you are too nice, you could be known as a pushover, and you will go bankrupt, the castle will never be built, and you will fail as lord of the land. It is a balance of all actions that you must perform within the game that will spell your victory or defeat.

Remember to keep an eye on your military, as raiding Celts or ogres will try to destroy what you have built. Balance is the key to playing the game. *Castles* is a simulation whose game mechanics will be quickly mastered, but the play balance is something that will only be mastered with time. *Castles* is an intriguing simulation because it combines the concepts of role playing, strategy simulations, and arcade gaming in a single package. It's fun, fast paced, and best of all, constantly changing. No two games will ever be alike as you try to build your kingdom by balancing your wealth, popularity design skills, and leadership skills. Build your ultimate Castle design, conquer the Celtic lands, rule or be ruled; you are the master of your own destiny with *Castles*.



As lord or lady of the realm, you can design the layout of your own medieval dream castle.

Birds of Prey

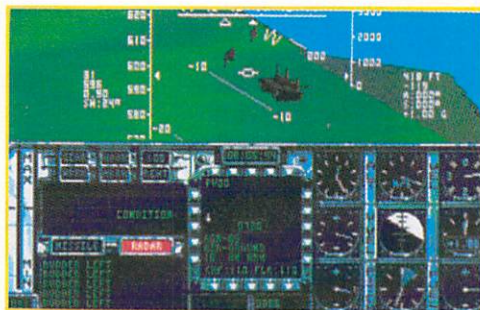
by Joe DiCara

It seems appropriate that the release of this combat flight simulator should coincide with the anniversary of Desert Storm; you are all invited to the *Birds of Prey* (BoP) family reunion. Practically every fixed-wing aircraft involved in Desert Storm is available to try in this simulation.

The most remarkable capability in this feature-packed program is the option to fly 40 different aircraft. The graphic model for each plane is amazingly accurate. Without doubt, the first thing you'll do after loading the program will be to scan through each one to see how it looks. The fidelity of all the aircraft is incredible, the best being the F-117A Stealth Fighter. With 40 selections, there could be a problem selecting the correct bird for the correct mission. Fortunately, the program designers, Argonaut Software, solved this potential problem with a slick set of menus that group aircraft by mission role. For example, if you elect to fly a troop drop, then only transports are selectable. Perhaps less obvious would be the correct choice for an effective air-superiority mission. This option does take the guesswork out of the task if you desire. The addition of wingmen into BoP is the next best feature. Depending on selectable options, there can be one or two wingmen accompanying the missions. These escorts are independently controlled by the computer and can always be depended upon to fulfill their mission role. If, for instance, you're flying bomber cover and the group comes under attack, it's safe to rely on the wingmen to engage the enemy. This frees you to remain with the bomber and satisfy your mission objective.

At the heart of this game are the 12 selectable missions—11 combat and one peace time. How they interact separates BoP from other combat flight simulations. During the course of any chosen scenario, most of the other missions can occur under computer control. Because of this, there seem

to be dozens of aircraft in the air involved in all manner of action. The result is a level of reality not available before BoP. For an explanation of this feature, follow me through one of my favorite missions—Bomber Escort.



Missions can begin at one of three possible airbases or two aircraft carriers. In this scenario the bomber is a B-52H; we'll fly an F-15E for escort, and both aircraft will depart from Airbase 1. If the bomber had been a B-2, then the stealth fighter and its matching radar signature would have been the logical choice. Because the B-52 cruises at 390 knots, we'll delay takeoff until it reaches the first Waypoint. While we're waiting, two Tornados leave from Airbase 2. When we all meet at Waypoint 2, they will be our wingmen and our bomber group will be complete.

Finally it's our turn to embark. While on route to the rendezvous, there's time to check the Battle Progress Report. Here is a summary of activity since our mission began. A group of aircraft departing from Airbase 3 headed toward a target in the southeast. Enemy fighters defending that area have also taken off to intercept. There's a C-130 Hercules making a supply drop, and a F-4 Phantom is on a reconnaissance mission. We can also check the AWACS Tactical Map, which shows the location of all airborne aircraft. This level of activity is ongoing and constantly recorded by the program.

Let's return to our flight. We are now 30 minutes into the mission and the enemy coast is finally passing beneath us—time can be compressed. Soon after, we're

alerted that two MiG's are coming up toward us. When it's certain that we are the interceptors' target, the wingmen peel off to engage. As our two aircraft enter the bomb run, things start happening fast. SAM's are locking on, and

defending aircraft are penetrating our cover.

What action will you take? Do you stick with the B-52, destroy the SAM site, or intercept? Dammed if you do, dammed if you don't, but that's part of the fun and challenge! After the bomb run, all surviving aircraft head back to home base. Unless we're jumped on the way out, our mission ends when our bird rolls into the hangar.

During our mission, the computer has kept track of every major action or event that occurred—who took off from where and when, who got splashed by whom and what, what your target status is, what your victories were, and on and on. All this data is compiled in numerous pages of charts, graphs, and logs. A 188-page manual completely documents all of BoP's features. Sixty pages are devoted to aircraft specs, which the program references once as a method of copy protection. While two disks are provided, the main program is contained on one disk. There is little disk access during game play, so the program runs nicely on single drive systems. Installation on hard drives is possible and does enhance play somewhat. There's very little missing from BoP and nothing important to complain about. Perhaps my biggest disappointment was the troop- and supply-drop missions. I expected to see the sky filled with parachutes. What a let-down I felt when only one object exited the aircraft. Still, with all its features, true-to-life action, and ease of use, BoP is the best combat flight simulation currently available for the Amiga.

DIVERSIONS

World Circuit

by Rich Mataka

World Circuit is the newest Grand Prix race simulation that is available from MicroProse. Though not the first genre of this type of simulation, it is without a doubt one of the best. I can say right up front that I spent many more hours racing the world Grand Prix circuit vying for the coveted Championship Trophy than I should have. Many evenings have been spent practicing and racing instead of being productive on my Amiga computer. It takes an exceptional game to pull me away from working. The *World Circuit* simulation is just that type of game.

You may feel overwhelmed upon your first glance of the materials included in the MicroProse box. The game itself is provided on four disks. The fourth disk includes a README file that should be read because it contains the latest information. The manual is 168 pages long, but you don't need to read all of it to play the game. Eventually, you should take the time to read the manual. It adds enjoyment to playing the simulation by explaining features which you otherwise may not find. There is a Hard Disk Install program, allowing the game to be installed on any drive in your system. There is no physical copy protection on the disks. The copy protection that is used with *World Circuit* is the Page-Paragraph-Line-Word format that is becoming common with MicroProse simulations.

Upon clicking on the *World Circuit* Game Icon, you hear some impressive opening music as the credits roll. Luckily, the game is very intuitive to play. MicroProse has been good enough to include a "Quickstart Learner's First Lesson" that guides you through a

few Rookie laps at the famous Monza circuit.

The Formula One Grand Prix cars in *World Circuit* can be controlled from either the keyboard or joystick. Whichever method you choose, controlling the car is challenging. There are so many options for configuring gameplay that it's difficult to mention them all. There is a Rookie level where all the controls are automated and an Ace level in which all of the car's controls are manual. I recommend the Rookie level for the beginner until he or she is familiar

from the original race locations. Driving in Monaco, you will see a yacht in the harbor, or in Mexico City, you will see the Dome. The level of detail presented in the game is to be admired.

Selecting the Championship Season takes you to a diagram of the first World Circuit, which is the U.S.A. located in Phoenix, Arizona. Selecting OK with either the mouse or joystick will take you to the Grand Prix Menu. It's from this menu that all of your decisions will be made regarding the race you're about to undertake. The options are Free Practice, Qualifying, Pre-race Practice, Race, and Abandon Event. The Free Practice allows you to tune your car for maximum performance before trying Qualifying. Once you exit Free Practice, you cannot go back to it for this track. Next, you must move

Finally, you get to the race event itself. You'll see the cars lined up in the Formula One spread at the Start/Finish line. Depending on how well you qualified will determine your starting position among the 26 cars in the race. Then you will see the Red and Green lights appear over your car, as you begin anticipating the start of the race. The green light will come on as you're off and racing. Follow the winding course, but don't look too closely at the nice scenery, as you must pay close attention to your driving to avoid any mistakes.

Each track has different characteristics. The car's setup—gear ratio, front and rear spoiler wings, front and rear braking adjustments—can be different for each track. It's up to you to decide. Here the practice sessions are most important. You can retune your car's adjustment any time you're in the pits. All you need to do is pull back on your joystick to find yourself in the mechanic's bay where all adjustments can be made. It may take a while before you learn all the nuances of the game. However, patience will pay off as you become the World Circuit Champion and learn about the different circuits.

How good is *World Circuit*? In a word, excellent. The graphics are smooth, the Quickstart Instructions are excellent, and the action is fierce. Before long, you will be playing the game at its highest level and enjoying it even more. Even the number of laps you can race is adjustable as a percentage of the real amount on the World Circuit. This game is smooth, well animated, fast-paced, and addictive even on a stock Amiga 500. What more can you ask for in a Formula One racing simulator except a chance at the real thing? This is the closest I've come so far.

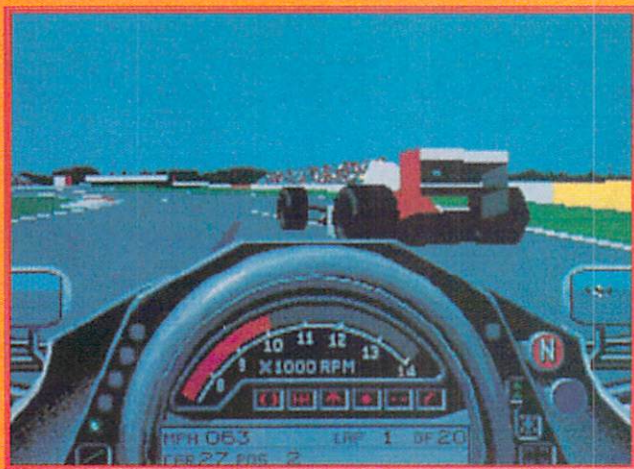
Power Pinball

by Rick Manasa

Some of you youngsters may not be able to relate to arcade entertainment B.V. (Before Videogames), but back in my youth, pinball was one of the favorite pastimes down at the bowling alley on a Saturday afternoon (I ran with a wild crowd). *Power Pinball* is a very good simulation of the classic pinball games many of us grew up with. It not only recreates the sound and action of a freestanding pinball machine, but *Power Pinball* lets you modify the included machines and even design your own machines from scratch.

Power Pinball provides many of the features found in the late lamented *Pinball Construction Set* with a few twists and wrinkles of its own. The program comes on one non-copy protected disk and will run on any 512K Amiga with one floppy and is easily installed on your hard drive. The included HDInstall program is very comprehensive. Short of creating new directories, there isn't much more you could ask of it. The manual is thorough and well written, especially compared to many others I've seen. *Power Pinball* was written on the Amiga and takes advantage of all Amiga specific bells and whistles. There are keyboard equivalents for all pull down menu commands, and you can multitask, import your own IFF sounds and graphics when designing your own machines and swap your creations with other *Power Pinball* owners.

Once you're installed, you're ready to go. Just drop in the coins and start playing! When you hit the Return key, a coin drops into the slot giving you one credit. Up to four people can play at the same time, or you can play all four positions by yourself. The spacebar starts play and your right and left Amiga keys control the flippers. The up and down cursor keys control the plunger depth and the right Amiga key launches the ball. You can even tilt the machine with the Alt keys. Tapping the left and



with all the game's options. These options are braking, gear shift, self correcting spin, indestructible mode, ideal line, and suggested gear. These are simple enough because you only need to think about steering the car, which is done with the joystick. When you feel comfortable with your driving skills, you can progress along the difficulty scales. As you progress, you use less of the automatic driving options. This provides you with a more realistic driving simulation of Formula One racing.

To become Champion, you must successfully race in all of the original 16 racing circuits. Each is jam-packed with detailed scenery

on to Qualifying. You have a certain amount of time in which you must qualify for the race. While you sit in the pits, you'll see a digital board constantly being updated with the racers' qualifying positions. Now you will find out who had the fastest qualifying time, therefore sitting on the Pole Position.

Next is the Pre-race Practice. Here you can make any last minute adjustments to the car before the race begins. If you feel comfortable with the car's performance from Qualifying, you can skip this option and go right to racing. Otherwise, make your last minute adjustments before the race.

Trump Castle II

by Jeff James

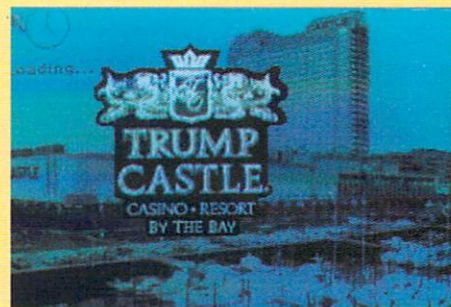
Inspired by the real Trump Castle Casino in Atlantic City, Capstone's *Trump Castle II* (TC2) offers Amiga owners a chance to win big at six popular gambling games. Whether your favorite game of chance is baccarat, blackjack, craps, roulette, video poker or slots, TC2 has got you covered.

To play those games, a visit to the lobby of the casino is necessary. Using a digitized picture of the actual Trump Castle Casino lobby, players choose new games by simply clicking on different locations in the picture. In addition to playing the six included games, players can visit the cashier, read the hotel newspaper, save games and even do some limited exploring of the casino. Both the mouse and keyboard can be used to select these options.

Once you've received your initial gambling allowance of \$1,000, you can head off to the gaming tables. At each of the six game locations, digitized animations of dealers and casino visitors are seen, although most are a little coarse and grainy. The games themselves are a little slow—even running on an accelerated Amiga, most of the games operated sluggishly. Generally, the games are

enjoyable and easy to play, and an included on-line help facility helps gambling novices get up to speed. Digitized sounds accompany most of the action, particularly so in the slot machine and roulette games.

TC2 supports all Amiga models with at least 1 MB of RAM and Workbench 1.2 or higher, including Workbench 2.04. TC2 isn't hard drive installable, although the two game diskettes are devoid of any copy protection. Copy protection involves looking up a word in the included Trump Castle gaming guide, which accompanies the program's 17-page manual. A discount coupon to the actual Trump Castle Casino in Atlantic City is also included, allowing gamers who have improved their gambling skills in TC2 to try the real thing at a discount. TC2's sluggish animation, lack of hard drive support and the mediocre quality of some of its gambling games may deter less avid gambling aficionados. However, if you thoroughly enjoy card and gambling games, TC2 is definitely worth a look.



right Alt key simulates whacking the machine on the left and right. While perhaps not as satisfying as physically shaking your Amiga, it is most definitely safer.

How does it play? Not too bad. The ball generally moves in a realistic fashion around the bumpers and playing surface. The flipper and other key placement ergonomics are good. It doesn't take long to get right into the feel and spirit of real pinball. Just darken the lights, add a jukebox and a smoky room with the tinkling of glasses in the background for atmosphere to complete the setting. The included graphics and sounds are adequate. They're certainly not in the wow 'em-zow 'em class. You could view this as appropriate, however, since we're talking about a pinball re-creation, not a shoot-'em-up or role playing type of game. Don't forget that part of the fun of Power Pinball is that you can create or import your own sound and graphics. If you're not satisfied with what's provided, you can roll your own.

The meat of Power Pinball is in its edit mode. This is where you can design your own bumpers, walls, etc., and place them on the playing field. Bumpers and walls can flash when hit, play a sound effect, throw the ball off at odd angles and more. You can make bumpers and walls invisible if you like. Heck, you can select Tommy mode and make the whole machine invisible! You can do minor tweaking or construct a complete game. There are many design tips throughout the manual. There are enough options in Power Pinball's edit mode to allow the most serious designer all the latitude he'd need to make the pinball game of his dreams.

While Power Pinball does have a rudimentary set of paintbox tools, it has no facilities for creating or editing sounds. If you are going to do any serious pinball machine design, you'll want to use your regular paint and sound design programs anyhow to generate your images, music and sound effects, and then import them for placement in Power Pinball. KarmaSoft, the makers of Power Pinball, employ two types of

product protection. First, they offer technical support only to registered users. Second, Power Pinball uses a look-up-a-word-in-the-manual type of copy protection. It gives you a few chances to type the correct word in before it either accepts your input or returns you to the Workbench. This feature wasn't as helpful to me as intended, because my manual had a few pages missing.

I've had a few problems while running Power Pinball. I was visited by the guru once while running *WordPerfect*. The program also froze once without crashing while writing this review. This is puzzling in an Amiga program that professes to support multitasking. Other than these isolated incidents, the program performed well. I can't say that I was excited by Power Pinball. I enjoyed fiddling with the editing capabilities and playing a game or two for old times' sake. Being able to customize the playing surface certainly adds a dimension to Power Pinball that would be lacking in a play-only version. While the execution of the pinball concept is well done, I'm afraid that I'm a bit spoiled by the diversity and ingenuity of the games we see on computers these days. Power Pinball is not of the sweaty-palmed arcade action-adventure or a brain tickling puzzler type of game currently being pumped out for our amusement. If this is what you require from your entertainment software, then you should look elsewhere. On the other hand, if you want to play pinball in your home without buying a pinball machine of your own, you could do worse than Power Pinball.



The Keys to Maramon

by Matt Drabick

4-D Boxing

by Jeff James

After you've used your computer to play a few rounds of golf, assemble a high-caliber football team, win the Indy 500, and emerge victorious in the computer-simulated World Series, what else is there to do? If you're a fan of computer sports simulations, Electronic Arts has the answer—4-D Boxing.

Getting started requires that you first take a trip to the locker room. Here you can create, save, and delete your boxers, or take a quick peek at the Boxing Hall of Fame. You can design your boxer to your own specifications, including height, weight, speed, stamina, and power. You also get the chance to change the color of your boxer's fighting attire and pick a suitably aggressive head to top off your creation. After you've created your boxer, it's off to the ring.

Although you can choose to fight in single, unconnected matches, the main event option allows you to punch your way to the world championship. Starting out ranked dead last in a field of 50, you must battle your way through dozens of opponents to reach your ultimate goal: a showdown with the reigning world boxing champion. Each fight brings more money to fatten your wallet and more training to toughen your boxer.

The most amazing thing about 4-D Boxing is the animation. Boxers bob and weave in uncannily realistic motion, moving, jabbing and punching around the ring just like real boxers. Distinctive Software reportedly filmed real boxers in action then converted their movements to digital format for the smoothest motion possible. However they did it, 4-D

Boxing is one of the first computer games I've seen to offer such realistic motion. It has to be seen to be believed.

Unfortunately, this smooth animation does have a cost. On a standard A500, playing at the highest detail setting made the game nearly unplayable. You can adjust the graphic detail of your pugilists to speed things up, which unfortunately removes the often hilarious facial expressions from your boxers. These problems disappear on an accelerated Amiga, so owners of faster machines shouldn't have anything to worry about. Sound is acceptable, limited mostly to the sound of landing punches, the ring of the bell, and a few grunts and wheezes from your boxers as they get pummeled.

4D Boxing can be installed on a hard drive and works well on an Amiga 3000 running AmigaDOS 2.04. Copy protection is manual-based and marred by a few glitches. For example, to start playing, you are presented with a picture of a boxer and asked to give his correct name. You then find the picture of the same boxer in your manual and type the name listed below his photograph. Unfortunately, a few of the boxer's mugshots are missing from the manual, an omission which results in legitimate owners being dumped out of the program

for failing to complete the copy protection correctly. This happened very infrequently; yet I still feel Electronic Arts should have checked the copy protection more thoroughly before shipping the product.

I normally don't get too excited about computer sports games, but 4-D Boxing offers an intriguing glimpse of the future of computer sports simulation. 4-D Boxing is undoubtedly the best computer simulation of professional fisticuffs currently available, bar none.

View the Rock 'em Sock 'em action with the instant replay feature in 4-D Boxing.



The walled island town of Maramon, known for its fishing and its famous blue pearls, is under constant siege at night by monsters that come from cellars beneath the town. The situation is desperate, and an emissary has been dispatched across the Sea of Oshmar to find a hero from Knossos to rid the town of its unwelcome minions of Darkness. Should our hero succeed, the reward from the people of Maramon will be very generous indeed.

Such is the premise behind *The Keys To Maramon*, a fantasy role-playing/action game from Mindcraft Software, Inc. The player has four different heros to choose from, Huntsman, Courier, Blacksmith and Scholar, each with their own special strengths and abilities. During the day, our hero can interact with any of the town people, including the mayor, the librarian, the various tavern and inn owners, and the various weapons, armor, magic, and herbs and potions storekeepers, to learn as much as possible in preparation for that night's battle. While the sun is still up, weapons and magic wands can be fixed or recharged, and rest and refreshment taken to recover from the previous night's efforts.

Four locked Dark Towers stand in Maramon. Each night orcs, goblins, domugs, wolvinga, gnolls and zorlins swarm out from one of the four towers in Maramon, running around and waving their torches and axes as they steal whatever they can find and set fire to different buildings. It's up to our hero to learn which tower the monsters will emerge from each night and try and slay them all before dawn breaks. Should any monsters survive past daybreak, one or more of Maramon's buildings will be looted, burned or damaged.

Of the four heros available to choose from, the Scholar is the best prepared with his saber,

flamewand and fearwand. The fighting isn't one-sided. The monsters can and will fight back, either by touching our hero and draining his life away, or in the case of the wolvinga with the use of their deadly longbows. Our hero must kill all of the monsters before they kill him, or else seek rest and refuge in one of the town's three strongrooms should the monsters prove to be too much to handle. Of course, without our hero to stop the monsters the town will be badly damaged the next day.

While our hero can expect a fortune in pearls should he succeed in ridding the town of all its monsters, he must use his own gold to pay for any repairs to a damaged sword or to a flamewand that needs recharging. Special weapons are available from the local magic shop at a price. Fortunately some of the monsters that are slain leave behind a pouch of gold for our hero to pick up, and the town mayor does periodically pay our hero a small amount of gold. It's even possible to sell unwanted items to the town's various shopkeepers as well.

The trick to playing The Keys To Maramon is to learn which tower the monsters will emerge from each night so that our hero can be in the right place at the right time. Each of the four Dark Towers can be opened with its own

special metal key. If one of the keys can be found, then our hero can go beneath the town and slay all of the monsters. One of the local townspeople managed to find his way beneath the city only to discover the horrible secret behind the origin of the monsters. What he discovered was so terrifying and upsetting that he has been unable to tell anyone about what he found on that awful day.

This is a very enjoyable and addicting game, with obstacles in the way that make each successive level of play harder and more challenging. The graphics are good, and the character movement smooth and fluid. The game comes on one floppy disk and requires at least 1MB of RAM. If you are looking for an enjoyable way to spend some time, try out The Keys To Maramon.



You'll meet various townsfolk in The Keys To Maramon.

product information

World Circuit: The Grand Prix Race Simulation
Price: \$59.95
MicroProse Software
180 Lakefront Drive
Hunt Valley, MD 21030-2245
Inquiry #245

Power Pinball
Price: \$39.95
Karmasoft
P.O. Box 1034
Golden, CO 80402
(303) 277-1241
Inquiry #246

Trump Castle II
Price: \$49.95
Capstone
14540 SW 136th St., Suite 204
Miami, FL 33186
(305) 252-9040
Inquiry #247

The Keys to Maramon
Price: \$49.95
Mindcraft Software
2291 205th St., Suite 201
Torrance, CA 90501
(800) 525-4933
Inquiry #248

4-D Boxing
Price: \$49.95
Electronic Arts/Distinctive Software
1450 Fashion Island Blvd.
San Mateo, CA 94404
(415) 571-7171
Inquiry #242

Castles
Price: \$59.95
Interplay Productions
3710 S. Susan, #100
Santa Ana, CA 92704
(714) 545-9001
Inquiry #243

Birds of Prey
Price: \$49.95
Electronic Arts
1450 Fashion Island Blvd.
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From New York To London

New Products excite Amiga users.



Either in New York (left) or London (right) Amiga enthusiasts arrived by the thousands looking for new products and bargains.



World of Commodore Amiga New York April 24 to 26

The World of Commodore Amiga opened for its third time on the pier in New York city. This year, show officials announced that more than 20,000 attendees arrived for the three-day event to see the latest new products from an assortment of international Amiga developers.

Commodore hosted the event with keynote addresses and seminars by Commodore executives. Jim Dionne, president of Commodore U.S.A., gave a description of the many ways the Amiga is being marketed in the United States. He discussed Commodore's successful rebate programs as well as advertising in Amiga and other trade publications.

In an Amiga developer program hosted at the close of the second day of the event, not only did CBM demonstrate what they were doing in the U.S., but guest speakers from Europe also gave Amiga vendors valuable insight into what markets were available in Europe and how to address them.

Unfortunately, Commodore was not able to release the A570, CBM's anxiously awaited CDTV peripheral for the Amiga 500, but Mr. Dionne stated that the release was imminent. He also said that the new A570 would not be compatible with the current U.S. Amiga 500. Commodore plans to implement both a dealer system and a system utilizing their current Federal Express program to retrofit the existing A500's for purchasers of the new A570 drive.

Also not in evidence was Commodore's newly announced A600 (see details from the London portion of this article), CBM's new small Amiga. CBM executives do not expect to release the unit in the U.S. soon. Its high price point of £399 for the base unit makes it more expensive than the more versatile Amiga 500. Since the unit will not attach to the current A570 and there appears to be no CDTV unit for it in engineering, the market for this type of Amiga in the U.S. is very small.

Although Commodore was silent on pre-announcing anything at the exposition, visitors were allowed to test and browse through the current Amiga product line. CDTV was again a favorite of attendees with a growing number of titles present. The A3000 tower and the A3000UXD-UNIX were also on display.

While NewTek drew everyone's attention with their display of Video Toaster 2.0 effects in the front of the hall, other manufacturers were diligently demonstrating their latest new works. Not the least of these was Great Valley Products, who commanded the largest booth in the show aside from Commodore.



The Amiga 600 at a base price of £399 means: Europe YES, U.S. probably not.

GVP's list of products seems to grow with each event. While they have shown some of their technology at earlier events, they chose WOC NY to display some of their latest enhancements to current products as well as an impressive list of new material.

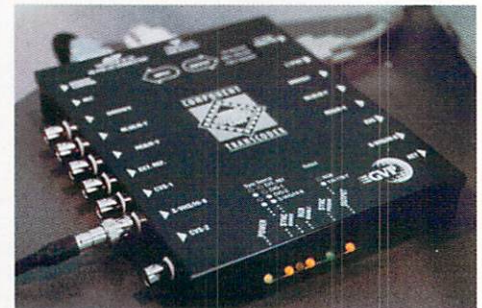
Gregg Garnick, GVP's Vice President of Sales and Marketing, stated that he was very excited about the show and GVP's position in the Amiga market. "Initially our strength has been the hard cards, accelerator boards, and mass storage devices. That is where we have gotten our name and our reputation. We believe that the bigger plan is multimedia. We feel that we are one of the few companies that is putting everything together as a total solution."

"The Amiga is sitting on the edge of what I think is a revolution of desktop video production. This is where we (GVP) are heading. With the IV24 for example, people can get into some very heavy video editing. Videographers can use this as a major tool for video titling and interactive concepts with picture in picture." Mr. Garnick's statements were underlined by the wide range of Amiga products showcased in the GVP booth.

GVP's Impact Vision 24 board with the new Video Interface Unit (VIU) was a hot item. The IV24 is a multifunction peripheral specially designed to fit in the A3000 video expansion slot (or an A2000 Zorro slot with an optional cable adapter kit connecting it to the A2000 Genlock slot). The board features a 1.5 MB frame buffer to display 24-bit broadcast quality video, freeze, grab and store video from any live source, picture-in-picture display, plus four specially adapted software packages designed for use with the IV24.

The VIU-S unit for the IV24 includes composite video to RGB conversion, s-video (Y/C) to RGB conversion, RGB plus sync input, software-selectable video source, sync detection, sync generation, automatic signal equalization, software-controllable video signal conditioning, external genlock/keyer input and output, plus LED mode indicators. The VIU-CT is an option for professional users which includes all the features of the VIU-S plus component Y/R-Y/B-Y transcoding, RGB plus composite sync, VGA-style RGB monitor passthrough, and RGB plus H and V sync.

From its Toronto WOC introduction, GVP also showed the latest new features of PhonePak for FAXmodem and Voice mail.



GVP's Video Interface Unit for the IV24 multimedia system will be available in two versions.

From its Toronto WOC introduction, GVP also showed the latest new features of PhonePak for FAX modem and Voice mail. This board allows you to receive fax transmissions directly to your Amiga's hard disk, record and play voice messages, display/play voice and FAX messages together, create custom databases with names and numbers, and add PhonePak for multiple phone lines. The PhonePak also multitasks so you can keep working while it's working.

In a software entry, GVP stunned attendees with their new Mirage package. Mirage is a full-featured image processing program. The program features digital image processing and retouching, fast virtual memory, scanner support, display enhancement support, true color painting, full animation support, file format conversion, an open modular interface, and full-user configurability. Mirage loads and saves all the popular file formats with support for hardware platforms, such as the IV24, HAM-E, DCTV, Firecracker, and the DMI resolver. It allows for 24- to 12-bit color reductions for 12-bit printing, CMY/CMYK/RGB color separations, and halftoning, as well as PostScript output and 24-bit Amiga printer device output.

GVP's hot new EGS-110/24 graphics board also attracted a large number of people. The EGS-110/24 has been designed to plug directly into the 32-bit bus found on all of GVP's Combo type 030 and 040 accelerator boards for the A2000. The board is a high performance RGB output graphics system which offers fully programmable pixel rates from 5MHz to 110MHz in 16 million color, 24-bit. The board is available in a variety of RAM, VRAM, and DRAM configurations.

GVP's A530 Turbo accelerated hard drive made its debut, as well as GVP's 68040 accelerator for the A2000. They showed their I/O extender for the A2000 and A3000 and of course, the IV24 board, complete with an RGB splitter and powerful software bundles.

The G-Force 030 combo with its 68030 CPU, 40MHz clock speed, 68882 Math Co-Processor and 4-16MB of 32-bit RAM was an attention getter at the GVP booth. The board also features an on-board high performance SCSI controller. This combination keeps other slots free for further expansion.

For the Amiga 500, there were several products available. The A500-HD8+ is a hard drive expansion subsystem. They feature a Quantum disk drive, RAM expansion capability, custom VLSI chip, and FAASTROM SCSI driver. There is also a slot for an optional 286 board from GVP. Some other features include up to 8MB RAM, external mounting, external SCSI port, allowing up to 7 SCSI devices, and a choice of 52, 120, or 240MB factory installed and formatted Quantum drives. Also for the A500 was the DSS8 Digital Sound Studio. This high quality stereo sampler, editor, and sequencer is specially designed for use with a 500. It features 8-bit sound, a 4-track sequencer, MIDI-in capability, and precise graphic wave form editing among others.

GVP unveiled a new accelerator for the A2000 at WOC. The A2000G-Force040Combo is the latest member of the Combo family of multifunction A2000 accelerator products. The board is available in both 25 and 33 MHz versions. It will come standard with 4MB of 32-bit 60Ns custom DRAM and will be configurable in 4MB increments to a full 16MB. (Soon to be expandable to 64MB as soon as the 16MB chips become available.)

A new accelerator for the A500 was also introduced. The A530 Turbo features a 40MHz 68EC030 CPU and has the capability of adding up to 8MB of 32-bit 60ns DRAM in 1, 2, 4, or 8MB increments. It also features a socket for and optional FPU. It also features a high performance built-in SCSI controller and comes with a choice of hard drives.

ASDG's booth was an intimate lecture area which ran a very professional video tape of the added features to their new AD PRO package which now features a wealth of tools for animation and video. Perry Kivolowitz, ASDG's president, was on hand for a presentation on Friday to demonstrate the latest features of The Art Department Professional-Version 2. ASDG was also heavily involved in the massive Great Amiga Railway project centered on the show floor. ASDG was responsible for developing the hardware and software which operated the train layout, *Amazing Computing* was responsible for the train layout and construction, and Commodore CATS was instrumental in supplying equipment and expertise to this highly unique Amiga application.

Bob Tingley of DKB appeared at the exposition to display the DKB 2632 32-bit memory expansion for the Amiga 2500/030. This special board allows you to go beyond the normal 4 MB of 32-bit memory on your CBM A2630 Accelerator. The DKB 2632 allows you to expand to 112 MB!

Dr. T's displayed their latest entry into the Amiga music market, as well as their entire Amiga MIDI line. Boom Box is an interactive music program that lets you control the music. There is no MIDI required so it makes playing the music easier. BoomBox features a totally interactive remix screen to add echo and effects to both the existing song files and or to your own arrangements.

Electronic Arts was showing off their latest version of Deluxe Paint—DP 4.1. Representatives from EA were on hand to demonstrate the fixes and new additions to Deluxe Paint. Some of the new features include scalable font support and full screen metamorphosis along with faster performance, better import and conversion of HAM brushes, and palette markers to indicate the color cell number. EA also displayed some of their new games for the Amiga, such as John Madden Football.

Gold Disk was on hand to demonstrate some of their newest products in a large classroom style setting. Some of the items on display were Video Director, the complete editing system for anyone with a camcorder, VCR, and an Amiga; Professional Page 3.0, the latest update to this top selling DTP pro-



There was something for everyone at this year's World Of Commodore Amiga in New York.

gram; ShowMaker, the complete desktop video solution that lets you sequence a variety of multimedia events including animations, sound effects, music and more; and Professional Calc, the advanced presentation spreadsheet with business graphics and database. Gold Disk also offered their popular \$99 Professional Page Power Up and \$99 Professional Calc Power Up promotions.

Migraph gave complete demos of their great new OCR software for the Amiga. The Migraph OCR allows you to turn any scanned monochrome IFF or TIFF file into an editable text file. Other Migraph products on display included the Migraph Hand Scanner, Touch Up image editing software, and their Merge-It and scanning tray combination which easily allows full-page scanning with the Migraph Hand Scanner.

New Horizons showed their complete line of productivity packages for the Amiga. Among the products demoed were ProWrite 3.2, the hot new version of this word processing package, Quick Write, Design Works, Flow 3.0, and much more. Much attention was focused on ProWrite 3.2 and its powerful features.

Central Coast Software was located in the New Horizons booth. They displayed their top selling Amiga utility, Quarterback 5.0. This is one of the more powerful backup utilities available for the Amiga. CCS also showed Quarterback Tools, their disk utility which is designed to maximize speed and



The A570 is due Summer 1992 in Europe and the United States.



The Wembley Exhibition Hall was the site of the first Amiga Shopper Show.

reliability of your Amiga disks. Quarterback tool easily recovers deleted files and unformats disks you formatted by mistake. Mac-2-DOS and DOS-2-DOS, the two leading file conversion utilities from CCS were being shown as well.

Octree Software presented the WOC attendees with a full demonstration of Calagari 2. Calagari's easy-to-use virtual reality technology allows real time manipulation of 3-D objects in full perspective. Calagari 2 features full modeling, full color rendering for DCTV, HAM and spline based animation. Calagari Pro24 includes support for 24-bit frame buffers such as IV24 and FireCracker and direct signal frame recording to industrial VCR's. Octree's booth was consistently filled with attendees watching the smooth transitions and professional results created with this product.

Those daring guys from San Francisco, Pacific Digital, showed their newly improved line of special effects software, including Stars FX, a sophisticated starfield flight simulator. Multimedia FX includes new sound effects

production techniques and animation tracking. Spectrum FX and Vocoder FX are two of their other effects packages. These packages allow you to do all different types of special effects. Sound, lights, animations, scenery, displays, motions, and image enhancements are all possible with the different combinations of these effects packages.

Foundation is now being published by Parallax Publishing. Foundation is the multimedia authoring system for the Amiga and CDTV which was earlier marketed by Impulse. Unique in its ability to automatically create application stacks, Foundation includes a set of point and click script builders, a complete macro record/playback system, and a complete on-line hypertext encyclopedia. Foundation can be used to create stand-alone applications including CDTV disks. The multimedia factory included with Foundation allows you to follow a series of on-screen questions and answers then builds a stack for you. Parallax Publishing has just recently taken over distribution and sales of Foundation 3.0. They say they will better market the product and hope to greatly increase sales.

SCALA Inc. demoed its unique family of presentation packages. SCALA 500 is a home video titler for the video enthusiast who wants to add titles to and special effects to their home videos. Some of the main feature of SCALA 500 are: You can load IFF pictures and add text, 34 picture transitions available including professional style and smooth scroll, and includes 25 text/brush transitions. SCALA 500 for CDTV was shown for the first time. Also on display were SCALA Video Studio for the Amiga professional who wants to combine the best the Amiga has to offer into one presentation, Info Channel, the truly professional presentation display and network system for the Amiga, and SCALA, the original multimedia presentation package.

Martin Lowe of the Amiga Centre Scotland traveled to New York to demonstrate the ACS 32-bit Harlequin frame buffer for the Amiga 2000 & 3000. This board offers 16.8 million colors & 8-bit alpha channel. Broadcast specification RGB output double buffering, plus resolutions up to 910 x 486.



Virtual reality is real with the latest Amiga-controlled hardware from Advanced Visual Presentations. The Superscape Virtual Realities games were constantly busy as everyone wanted a chance to step into another world.



Digital International entertained and informed with demonstrations of their software.

NewTek's Kiki, Kristine Stockhammer, was on hand at the front of the show area to demonstrate the Video Toaster 2.0 and its new features. Major improvements to the software for the Toaster have made this system even more powerful than the original. New effects include real-time warping, soft-edge transitions, and organic effects like clouds, pouring liquid, and fire. Features include a completely revised object modeler and faster rendering times.

The World Of Commodore was a success to the attendees and exhibitors. Although the show had fewer exhibiting companies than last year, the quality of the exhibits and the quality of the products were exceptional. While some attendees wished more companies had come, all seemed excited and happy with the results.

Amiga Shopper Show Wembley May 15 to 17

Londoners had two reasons to head for Wembley on May 15-17. Not only was there a series of World Soccer matches going on at Wembley stadium, but only a hundred yards away was the first Amiga Shopper Show from Future Publishing. While the Amiga event was promoted as a show for bargains with dealers and mail order companies in abundance, the show also offered a great opportunity to see a wide variety of new products from developers around the world.

Attendees arrived from as far away as Australia. Show officials stated that there were more than 13,500 visitors to the three-day event. American-based companies such as Great Valley Products and Supra had very active booth areas displaying their latest hardware. Progressive Peripherals & Software held a very successful booth by selling products with the latest advances from their product line.

Progressive Peripherals' Zeus 040 Accelerator for the Amiga 2000 is a complete workstation on a single card. It features a fast SCSI-2 DMA hard drive controller, a 28MHz or 33MHz 68040 accelerator, and a high-speed 32-bit RAM expansion in configurations up to 64MB. Prices begin at \$2895 for the Zeus. The Progressive 040 25MHz 68040 accelerator for the Amiga 2000 and 3000 (\$1795) and the Video Blender (\$1495) were also shown by PP&S. A version of the 040 accelerator is also available for the 500. Prices begin at \$1295.

Rambrandt, a powerful video and graphics system for the A2000 and A3000, was also on display and lists for \$3995. The FrameGrabber (\$799.95) is a real time color video image digitizer for all Amiga models. QicTape (\$599.95), the complete tape backup system, plugs into the floppy disk drive port, comes complete with drive, 40MB tape cartridge, manual, backup software, and a one-year warranty. PP&S's 2400-baud modem, Baud Bandit 2400 (\$149), works with all computers and provides affordable telecommunications.

As for software, PP&S showed 3-D Professional 2.0 (\$399.95), a 3-D modeling, rendering, and animation program. New features include texture mapping, Boolean merging, and more. The Animation Station (\$49.95), an easy to use animation editor for the Amiga, was also shown. DiskMaster II (\$69.95), the ultimate file management utility, rounded out the PP&S display.

Amplot, a powerful PostScript graph plotting program for the Amiga; and MoG (£100, £60 academic), a full-featured molecular graphics program for university students, teachers, and researchers in chemistry and biology were featured by SciTech Software representatives at the show.

Commodore U.K. took center stage to demonstrate the wide flexibility of the Amiga line as they introduced the A600 and A600HD to the public. The Amiga 600 (£399) and the 600HD (£499) are the new sleek members of the Amiga family which measure approximately 354 mm wide and 244 mm high. The processor is the standard Motorola 68000 running at a speed of 7.14 MHz. Three special coprocessor chips—blitter chip for graphics and animation, video chip capable of producing 4,096 colors, and a sound and port chip for four independent voices—are included. A parallel port, a serial port, and a PCMCIA smart card slot round out the features. 1MB of memory is standard, and can be upgraded to 2MB with an optional A601 card. An internal 3.5-inch floppy disk drive (800K) is built in, and the 600HD sports a 20MB IDE hard drive.

While A600's were indeed the most viewed new item at the show, CBM's CDTV was also showing its tricks. Several stands were constructed to demonstrate the newest releases for Commodore's CD based system.

Among other U.K.-based companies was Syntrox Systems showcasing their VHS Hi8 and DTV products: the COLOUR CORRECTOR for altering pre-recorded video material; the Genman Genlock and the Genmaster specifically developed for PRO-TV use; the Editman Animator, a single frame computer-based animation control system for use with consumer VCR's; the Editman Animator Pro, suitable for use with a professional VCR's such as the JVC BR605 'S'-VHS; and Editman Super, a new version which offers S-VHS / Hi8 socketry and other features including animation.

Take 2 (£99.95), a computer animation package from Rombo Productions, is compatible with any Amiga and supports 2, 4, 8, 16, 32, and HAM color modes. Take 2 is also available in an NTSC version and should be available in the U.S. this summer. Rombo also offers Megamix Master (£39.95), a digital effects cartridge that allows you to sample or record stereo sound from almost any musical source.

Citizen Europe Limited showed its extensive line of printers, ranging from 9-pin and 24-pin dot matrix, which include variants to print in colour, to laser and thermal fusion models, and a pace-setting personal, battery powered or AC powered printer. The most impressive was their 224. This color 24-pin printer has an interface designed exclusively for the Amiga. Sample prints from this device were amazing.

Supra showcased their complete line of Supramodems. The top-of-the-line SupraFAXmodem V.32bis modem features fax capabilities, 14,400 bps, with up to 38,400 bps throughput using data compression. Next in line is the SupraFAXmodem Plus. For data communications, it's maximum rate is 2400 baud with MNO 5 and V.42 bis error correction. However, it's a state-of-the-art fax modem (9600/7200/4800/2400bps send receive). The Supramodem 2400 has the same features as the previous model, minus the fax capabilities. The Supramodem 2400 is Supra's entry-level 2400 baud modem and completes the hierarchy of Supra's modems. Supra is also distributing the KCS Power PC Board for the Amiga 500. It's a complete 11MHz 1MB PC subsystem. It's a 1MB memory expansion and a PC emulator in one card.

Cortex displayed an external 8MB RAM Expansion for the Amiga 500 and 1000. The unit is also available in 2MB and 4MB versions. An internal expansion card is also available for the A1500 and A2000 in 2, 4, 6, and 8MB configurations. An internal 512K RAM Expansion kit for the 500 was also featured. Rounding out the Cortex line is the 2, 4, 6, or 8 expansion card for the A2000/A2500/B2000.

We went on a "safari" when we stopped by the booth of RGB Studios. Volumes from their RealThings library of unique animated clip art were on display. Safari (volume 4) features animals of the jungle and Sea Life (volume 5) features just about every living creature in salt water imaginable. Previous volumes, RealThings Horses, Birds, and Humans, are still available as well. All volumes are \$29.95, with the exception of Horses (\$24.95).

Microdeal presented CD-Remix Version II (\$49.95, £29.99). Take a music CD and make your own personal remix of it. Jump around the track, overlay any of the 600 sound effects, speech, or drum beats, insert pauses, robot speech, and more. Control a second CDTV player from the first.

Advanced Visual Presentations displayed a virtual reality system called Superscape Virtual Realities. Two virtual reality experiences—The Harrier Jump Jet Experience and The Robot Warrior Experience—were on display. These Amiga-based systems are now in heavy use in arcade centers throughout the United Kingdom.

Digitia International showcased their two new productivity packages, WordWorth and Home Accounts2. Home Accounts2 (£54.99) is based on their earlier release, Home Accounts and includes sophisticated reporting with graphics, and special options such as VAT and loan calculation facilities. WordWorth (£129.99) is a graphical word processing program with the Collins Spelling Checker and Thesaurus.

HiSoft presented their entire line of developer software including their latest Devpac 3 and HighSpeed Pascal. These packages are very well received in the U.K. and the HiSoft booth was busy during throughout the event.

While attendance may have been held down by the very good weather (the best weekend they had seen in several weeks), the dealers and developers were very pleased. The show was a success.

Vendor Information

ASDG, Inc.
925 Stewart Street
Madison, WI 53713
(608) 273-6585 FAX (608) 271-1988
Inquiry #249

Citizen Europe Limited
Wellington House, 4/10 Cowley Rd.
Uxbridge, Middlesex UB8 2XW U.K.
0895 272621
Inquiry #250

Commodore Business Machines
1200 Wilson Drive
West Chester, Pa 19380
(215) 431-9100 FAX (215) 431-9156
Inquiry #251

Commodore U.K.
Commodore House, The Switchback
Gardner Road, Maidenhead, Berks SL6 7XA
(062) 877-0088
Inquiry #252

Cortex Design Technologies Limited
Britannia Buildings, 46 Fenwick St.
Liverpool, L2 7NB, England
(051) 236-0480
Inquiry #253

DKB Software
50240 W. Pontiac Trail
Wisom, MI 48393
(313) 960-8750 FAX (313) 960-8752
Inquiry #254

Dr. T's Music Software, Inc.
124 Crescent Road, Suite 3
Needham, MA 02194
(617) 455-1454 FAX (617) 455-1460
Inquiry #255

Electronic Arts
1450 Fashion Island Blvd.
San Mateo, CA 94404-2064
(415) 571-7171 FAX (415) 571-7993
Inquiry #256

Gold Disk, Inc.
20765 S. Western Ave., Suite 120
Torrance, CA 90501
(213) 320-5080 FAX (213) 320-0298
Inquiry #257

Great Valley Products, Inc.
600 Clark Avenue
King of Prussia, PA 19406
(215) 337-8770 FAX (215) 337-9922
Inquiry #258

Migraph, Inc.
32700 Pacific Highway S, Suite 12
Federal Way, WA 98003
(206) 838-4677 FAX (206) 838-4702
Inquiry #259

New Horizons Software
& Central Coast Software
206 Wild Basin Road
Austin, TX 78746
(512) 328-6650 FAX (512) 328-1925
Inquiry #260

Octree Software
311 West 43rd Street, #904
New York, NY 10036
(212) 262-4077 FAX (212) 262-4081
Inquiry #261

Microdeal
P.O. Box 68
St. Austel, Cornwall, PL25 4YB, England
(072) 668-020
Inquiry #262

Pacific Digital Effects
6 Shelton Drive
Kentfield, CA 94904
(415) 457-8448 FAX (415) 453-4553
Inquiry #263

Parallax Publishing
471 Lighthouse Avenue
Pacific Grove, CA 93950
(408) 646-1015 FAX (408) 646-1015
Inquiry #264

Progressive Peripherals & Software
464 Kalamath Street
Denver, CO 80204 USA
(303) 825-4144
Inquiry #265

RGB Studios
Gables, Buxted
E. Sussex, TN22 4TP, England
(082) 573-2666
Inquiry #266

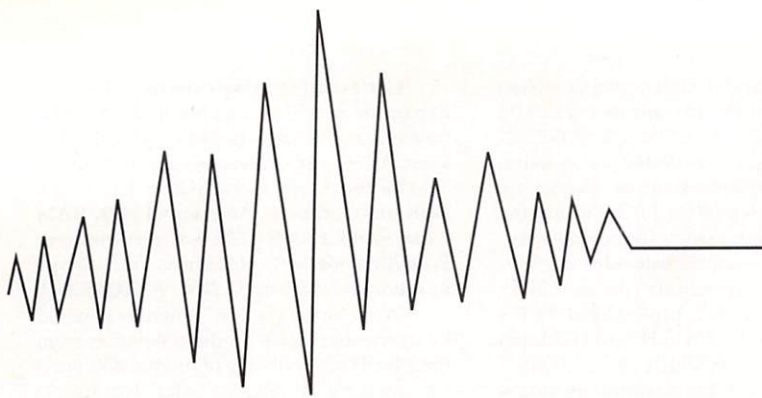
Rombo Productions
Baird Road, Livingston
SCOTLAND EH54 7AZ
(44) 0506 466601
Inquiry #267

Scala, Inc.
12110 Sunset Hills Road, Suite 100
Reston, VA 22090
(703) 709-8043 FAX (703) 709-8242
Inquiry #268

SciTech Software
23 Stag Leys,
Ashted, Surrey, KT21 2TD
Tel.: (0372) 275775
Inquiry #269

Supra Corporation
7101 Supra Drive SW
Albany, OR 97321 USA
(503) 967-2410
Inquiry #270

Syntrox Systems
Burlington House
Prime Industrial Park
Shaftesbury Street
Derby
DE3 8YB
U.K.
(0332) 298422
Inquiry #271



Feedback

Readers this month question recursion, want trading software, get help with *Harpoon*, express pleasure with GVP's service, and seek solutions to H-P LaserJet and *Professional Page* incompatibility.

Say "Fun" Fives Times, Recursively

Merrill Callaway wrote in AC V. 7.3, ("Recursive Function Calls in ARexx," p. 90) what he claimed to be an article about Recursive Function Calls in the ARexx language. There's no way to politely say this: Mr. Callaway does not know what he's talking about. His example program is not recursive. I'll type it here to demonstrate:

```
/* Coconut.rexx*/
n = 1
DO FOREVER
  num = fun(fun(fun(fun(fun(n))))
  IF DATATYPE(num, whole), THEN DO
    SAY 'the number ' n ' is valid'
  EXIT 0
END
fun: procedure
  ARG i
  i = i+1
  i = i/4
  i = 3*i
  return i
```

In order for a function to be recursive, that function must call itself. The function fun does not do this. I removed the comments from Mr. Callaway's program, but all line 3 is, is the function fun being called several times.

In order for the Recursive Call to be correct and not lead to an infinite loop, it must be possible to call the function with some initial condition and the recursive calls must approach that initial condition. Ex:

```
/* C Language, recursive factorial function */
int fact(int n)
{
  if (n==0) /* testr for intial condition*/
    return (1); /* return w/ value, do not
  make recursive call */
  else
    return(n * fact (n-1)); /* This is a
  recursive call */
}
```

Jonas S. Green
Cambridge, MA

Here is Merrill Callaway's response to the foregoing letter.—Editor

Yes, indeed, I do know what recursion is and I stand behind what I wrote. You should have noticed the distinction I made between recursive functions and recursive function calls, but both are properly recursions. Recursive function calls are commonly called iterative algorithms, as I said in the article. Perhaps a quote from a second source will convince you to abandon your erroneous conception of just what recursion is. From page 27 of Douglas R. Hofstadter's book *Godel, Escher, Bach: An Eternal Golden Braid*:

"What is recursion?...nesting and variations on nesting. The concept is very general. (Stories inside stories, movies inside movies, paintings inside paintings, Russian dolls inside Russian dolls (even parenthetical comments inside parenthetical comments!))—these are just a few of the charms of recursion.)

"One of the common ways in which recursion appears in daily life is when you postpone completing a task in favor of a simpler task, often of the same type. Here is a good example. An executive ...is talking to A when B calls. To A he says 'Would you mind holding?' and switches to B. Now C calls. The same deferment happens to B. This could go on indefinitely."

Now for the specifics of the recursion fun() in the article: fun() is not merely "called several times" but is *nested five deep* in a recursion or iteration. The ARexx command parser moves strictly left to right, so using our model above, it encounters the leftmost fun() in the line fun(fun(fun(fun(fun)))) and postpones—pushes on the stack—the answer until it calls the second fun(); and postpones this one until it calls the third fun(), etc. and only when it gets to fun(n) does it actually call the function. Then the answer fun(n) is fed into the fourth fun() (which is popped

from the stack) and the function is called again—until all the fun()'s have been popped and evaluated. This is most assuredly recursion. This is a recursive function call or an iteration algorithm of count five.

Merrill Callaway
Albuquerque, NM

A Commodities Trader

Having recently entered the ever-volatile market of commodity trading, I turned to your publication AC's *GUIDE to the Commodore Amiga* for information on software that would help me chart, graph, and update each day's charts using the power of the computer that I love, the Amiga.

I came across a program listed in your publication called *Microtrader* that seems to fit the bill, but my local Amiga dealer had no listing for the company called MicroActive Inc. Do they still exist? If not, could you recommend another program that could help me in my endeavor to compete in the Futures Market? Will I have to turn to a database and build my own in advance?

Michael Patnode
N. Dartmouth, MA

Mike, we, along with dealers and developers, consider the *GUIDE* to be an Amiga bible. The listing for *Microtrader* gives an address for MicroActive Inc. as follows:

785 Plymouth, Ste. 304
Montreal, Quebec
Canada H4P 1B2
(514) 731-3397

You might take the *GUIDE* to your dealer so that he can see the listing for himself, or you can call or write MicroActive yourself. Happy and prosperous trading!—Editor

Let me start off by saying that your magazine is great. Even though I have subscriptions to two other Amiga magazines, I quickly became a subscriber.

I wanted to share this so that possibly other readers may know of an upgrade that will enable Harpoon to run under 2.0. I would like to get the fourth data pack, but right now I have to put the purchase on hold as playing would be next to impossible.

Thomas A. Osborn
South Bend, IN

Great Valley Days

This letter is just the opposite, though! I bought a G-Force 040 accelerator from my local dealer and installed it in my Amiga 3000 according to instructions. I experienced problems with it on boot-up and some time on warm re-boots.

When no suggestions seemed to help, he told me to ship the accelerator back. I did so on a Tuesday afternoon, and received a *new* board Thursday morning, even though, as I told them, I had broken two retainers for the SIMM modules when removing the board!

I hope that this will be an incentive to other Amiga developers and dealers to treat their customers fairly and honestly.

Lawrence Aubin
North Uxbridge, MA

As always, it's pleasant to read a letter from a reader who's pleased with a product or service. People do tend to write mostly when things go wrong.—Editor

Unfortunately, I found no mention in your May article "The Big Three in DTP" concerning a problem I'm encountering using *Professional Page* 3.0, a H-P Laserjet IIP printer, and Commodore's Laserjet driver provided with Workbench 2.0. I lose one at the top and bottom of the page and one-quarter inch on each side. I contacted Hewlett-Packard, who could provide no drivers for the Amiga. Gold Disk explained that the problem was with the driver, not with Pro Page. Do you know of any driver for the LaserJet series? A friend is experiencing the same problem with his Epson Action Laser Printer since there is no driver specific to his printer.

Mark Goenner
Milford, MI

Yours is a problem similar to one addressed in the June issue of AC. We're forwarding your letter to John Steiner, author of "Bug Bytes," who might be able to suggest a solution.—Editor

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The Fred Fish Collection

Below is a listing of the latest additions to the Fred Fish Collection. This expanding library of freely redistributable software is the work of Amiga pioneer and award-winning software anthropologist, Fred Fish. For a complete list of all AC, AMICUS, and Fred Fish Disks, cataloged and cross-referenced for your convenience, please consult the current AC's Guide To The Commodore Amiga available at your local Amazing Dealer.

Fred Fish Disk 632

Attacks A two player strategy game played on a seven by seven grid, modeled after the arcade game called Ataxx. The moves and rules are very simple, but the strategy is complex. Includes source in Modula-2. Author: Scott Biggs

Copper An action game similar to Arkanoïd. The objective of the game is to destroy all the bricks on the screen with the ball. Some bricks may take only 1 hit to destroy, or as many as 8. Shareware, binary only. Author: Hal Truong

MrED An ANSI graphics editor that allows loading and editing of ANSI color files, commonly used in BBS programs. Features block moves, a line drawing mode, colorize functions, full ANSI sequence support, and more. Version 1.20, binary only. Author: Robert V. Fahey

PrintFiles A freely redistributable print utility to replace the standard workbench Printfiles command. Supports Arexx, application icons, and setting up a print list with unlimited number of entries. Requires OS 2.04. Includes two versions, V0.9e in English and V0.9e in German. Includes source. Author: Karlheinz Klingebell

Fred Fish Disk 633

GALER (Generic Array Logic) are programmable logic devices. "GALER" is the software and the hardware which is necessary to program your own GALs. The supported GAL-types are GAL16V8 and GAL20V8. The circuit diagram for the GAL device programmer is available from the author. Version 1.3, shareware, includes source. German version only. Author: Christian Habermann

PlansDemo Demo version of a drawing program with user definable fonts, over 32000 named lockable layers, definable screen resolution, hierarchical parts and grouping, importing of HPGL plot files, multiple simultaneously loaded drawings, many print options, fully programmable plotter support, 38 mouse drawing modes, over 22 numeric object creation modes, 53 editing modes, rulers, crosshairs, grid, bezier curves, and more. This is version 2.1, binary only. Author: Gary Hale

SoftLock A program to help prevent unauthorized access of your bootable hard drive by requiring a password each time you reboot. Has been tested under both AmigaDOS 1.3 and 2.04. This is version 1.0.1, shareware, binary only. Author: Allan Baer

Fred Fish Disk 634

APIG Arexx Programmers Intuition Graphics library is an Arexx external function library similar to RexxArLib. APIG.LIBRARY provides the Arexx programmer with access to most of the resident Graphic, Intuition, and Layer library functions. Allows you to create custom screens/windows, gadgets, requesters, intuitext, borders, etc. This is version 3.3, an update to version 3.1 on disk 629. Binary only. Author: Ronnie E. Kelly

NewDefTool A utility to change the default tool for project icons. Has a user defined configuration file for flexibility. Can change default tool according to old default tool or filenames. Supports the use of apicon, so using NewDefTool is a simple matter of dragging and dropping icons. Requires AmigaDOS 2.0. This is version 1.01, public domain, includes source. Author: Kjell Cederfeldt

NewPrint A program for formatting textfiles so that they will print out as you like them to, not on the perforation or on the platen. Adjustable top, bottom, left and right margins. Optional page numbers, header and footer info. This is version 2.1, shareware, binary only. Author: Kjell Cederfeldt

NonClick A program to stop floppy drive clicking. Features an intuition user interface that allows you to turn clicking on and off on every drive individually. Requires AmigaDOS 2.0. This is version 1.06, public domain, includes source. Author: Kjell Cederfeldt

Slicer A program for creating abstract art based on mathematical functions, such as the Mandelbrot set, Julia sets, and related

abstractions (chaotic dynamical systems). Features include fast fixed or floating point arithmetic, many different functions, many computation options, many coloring and rendering options, batch mode, focus, multi pass, zoom in, zoom out, pan, and four dimensional navigation. The produced pictures can be thought of as cross sections or "slices" revealing the insides of solid (if imaginary) objects. Version 2.0, an update to version 1.0 on disk 249. Binary only. Author: Gary Teachout

Fred Fish Disk 635

BootPic BootPic allows you to install nearly any IFF picture that you like in place of the WorkBench hand that appears after a reset. Version 2.0, an update to version 1.2 on disk 609. Binary only. Author: Andreas Ackermann

Icons A selection of 8 color hires icons for your viewing pleasure. Author: Ernst Janesch

LDP An Arexx compatible Laser Disc Player for RS-232 serial machines from Hitachi, Pioneer, and Sony. You can have a remote control on the screen and/or the program running to accept Arexx commands. The Hitachi drivers are untested. Works best with AmigaDOS 2.0. Version 1.31, includes source. Author: Ron M. Battle

PowerLOGO A powerful and versatile dialect of the LOGO programming language. Includes all of the support for word and list processing, program code processing, local variables, global variables, free variables, recursion, tail recursion, etc that you expect from LOGO. Also includes support for demons, while loops, menus, screens, windows, window graphics, turtle graphics, reading and writing files, optional inputs for procedures, mutable lists, etc. This is version 1.1, an update to version 1.0 on disk 377. Binary only. Author: Gary Teachout

Fred Fish Disk 636

Alert Gives detailed information about the meaning of various Amiga alerts given the 32-bit hex alert number. Version 1.00, includes source. Author: Stefan Zeiger

EDRC An extensive configuration file for Matt Dillon's DME text editor, using 10 menus and many functions. Author: Stefan Zeiger

Electron Electron World is a cellular automaton described in "Spektrum der Wissenschaft" ("Scientific American") March 1990. This is version 3.10, an update to version 2.01 from disk 584 (Wizard Works 2). Shareware US\$ 10. Binary only. Author: Stefan Zeiger

EnvPrint EnvPrint is a handy tool for printing envelopes for letters. Just type in the addresses or load them from disk, and EnvPrint will organize the printing job for you. Includes an Arexx port. Version 1.50, an update to version 1.20 from disk 584 (Wizard Works 2). Shareware US\$ 10. Binary only. Author: Stefan Zeiger

Henon A program for drawing Henon pictures. Includes 3 example parameter collections. Freeware. Binary only. Author: Stefan Zeiger

LISA A program for drawing Lissajous pictures. With full intuition support and WB2.0 design (even under 1.3). Different versions for 1.3 and 2.0. This is version 1.10, an update to 1.01 from disk 584 (Wizard Works 2). Freeware. Binary only. Author: Stefan Zeiger

MemMan The MemoryManager can be used to test programs under different CHIP/FAST memory configurations. Version 1.10, freeware, binary only. Author: Carsten Rautfuß

SmallPalette A very short replacement for the WB1.3 "Palette" program using the req.library's color requester. Source in SAS/C included. Public Domain. Author: Stefan Zeiger

Turbolife An implementation of the cellular automaton "Life". This is version 3.10, an update to version 2.01 on disk 584 (Wizard Works 2). Shareware US\$ 10. Binary only. Author: Stefan Zeiger

WizardClock A workbench clock with many features and various languages. Version 1.30, an update to version 1.20 on disk 584 (Wizard Works 2). Freeware. Binary only. Author: Stefan Zeiger

WizardsInfo General information about the Wizard Works disk 3, from which this material was included. Author: Stefan Zeiger

WWBatch This drawer contains two batchfiles that residents/copies to RAM: the commands used by Wizard Works 1 program startup batch files. Author: Carsten Rautfuß

Fred Fish Disk 637

LAZI A graphic interface for the archive utilities Lharc, Arc, and Zoo. LAZI will add, delete, extract, and update single or multiple files, list and test archives, allow you to read extracted readmes/docs or any other ascii file, save a configuration file that holds the locations of your work directories, archive utilities, and its position when iconified. At

least 1Mb of RAM is recommended. Version 1.1, an update to version 1.0 on disk 592. Binary only. Author: Mark W. Davis

LhA A very fast archiver that is compatible with MS-DOS LhArc V1.13 and LhA V2.13, as well as the Amiga LhArc. LhA is very memory efficient, has been written with stability and reliability in mind, has carefully optimized compression and decompression routines, is multitasking reentrant and pure, handles multiple volume archives (registered version only), and more. Version 1.22, an update to version 1.11 on disk 593. Shareware, binary only. Author: Stefan Boberg

MouseIDE A demo version of a "Mouse" utility with all the standard functions: mouse acceleration with threshold, window and screen manipulation by mouse and keyboard, mouse and screen blanking, SUN (auto-activation) mouse, user definable "hot key" command, etc. Also has functions other mouse programs do not, such as multi-icon-select with only the mouse, left and right button swapping, mouse port switching, WorkBench to the front function, freezing of the mouse and keyboard of all input, etc. Written in assembly language for efficiency in size and CPU usage. Version 3.34a, an update to version 2.56a on disk 567. Shareware, binary only. Author: Thomas J. Czarnecki

VideoMaxe A program to manage one's private video tape collection. Both program and documentation are in German; no English version at this time. Version 3.22, an update to version 3.00 on disk 547. Binary only. Author: Stephan Sürken

Fred Fish Disk 638

PowerVisor A powerful machine language level debugger for the serious Amiga programmer. Compatible with all Amiga models, all Motorola CPU's from 68000-68040, 68881/68882 FPU's, and the 68851 MMU. Supports Arexx scripts and scripts written in an internal language, online help, some resource tracking, and much more. Version 1.13 beta, shareware, binary only. Author: Jorrit Tyberghein

Run68010 Allows you to run programs that use 68010-specific instructions on 68000-based machines. Uses self-modifying code. Simulates 68010-specific registers. Starts from both WorkBench and CLI. Includes source in assembly. Author: Kamran Karimi

ShellTimer A well behaved shell based stopwatch program. Being shell based, the timer can be controlled from AmigaDOS scripts, from Arexx macros, from makelites, or interactively. Requires AmigaDOS 2.04. This is version 1.0. Includes source. Author: John LeMail

Fred Fish Disk 639

DrawMap Release 4.0 of a program for drawing representations of the Earth's surface. New features include using the full Micro World Data Bank data files, user selection of the items to be included (e.g., coastlines, rivers, etc.) and the amount of detail in each map, and a redraw function. Corrects a problem with box and text selection encountered under AmigaDOS 2.04, but AmigaDOS 2.04 is not required. Requires 1.5 megabytes of memory and a hard disk with 1.6 megabytes of free space. Also includes version requiring a 68020 CPU and 68881 FPU. This is an update to version 3.1 on disk 545. Includes full source. Distributed in two parts, the other part is on disk 640. Author: Bryan Brown.

Technoban A Sokoban type game written in assembler. Features include 4 worlds with 10 levels each, new graphics and sounds in every world, 32 colors, 5 stereo sounds, smooth animation, an integrated editor, and a code for each level. Version 4.07, binary only. Author: Tim Schattkowsky

Fred Fish Disk 640

DrawMap Release 4.0 of a program for drawing representations of the Earth's surface. New features include using the full Micro World Data Bank data files, user selection of the items to be included (e.g., coastlines, rivers, etc.) and the amount of detail in each map, and a redraw function. Corrects a problem with box and text selection encountered under AmigaDOS 2.04, but AmigaDOS 2.04 is not required. Requires 1.5 megabytes of memory and a hard disk with 1.6 megabytes of free space. Also includes version requiring a 68020 CPU and 68881 FPU. This is an update to version 3.1 on disk 545. Includes full source. Distributed in two parts, the other part is on disk 639. Author: Bryan Brown.

Fred Fish Disk 641

Annotate A text editor written for AmigaDOS 2.04 only, that takes advantage of public screens and the system default font. Features include folding, shifting, and full clipboard support. V1.0, binary only. Author: Doug Bakewell

BootX An easy to use boot, file and link virus killer with a KickStart 2.0 look (even under KickStart 1.3). Has lots of options to detect and kill Amiga viruses. Version 4.45, an update to version 4.02 on disk 560. Binary only. Author: Peter Stuer

EVW Early Virus Warning. This program was designed to let the user get a look at important "vectors" of the Amiga system. Does buffered scans of all library, device and resource vectors. Version 2.22. Binary only. Author: Peter Stuer

GearCalc A bicycle gear ratio calculator. Version 2.2, an update to version 2.0 on disk 514. Binary only. Author: Ed Bacon

LVD A first defense utility against file and link viruses. It patches the LoadSeg vector(s) and checks every executable that comes along. Recognizes 25 file or so link viruses. Version 1.72, an update to version 1.61 on disk 554. Binary only. Author: Peter Stuer

TLog An intuition based program that records statistics to monitor athletic training progress. Maintains a daily record of distance, time, heart rate, weight and temperature. Links a text file with the record for a free form diary. The AREXX commands provide the basis for generating custom reports from the data base. Sample script allows TLog to automatically get to a scheduler to post reminders of upcoming events. This is version 2.01, an update to version 1.0 on disk 514. Shareware, binary only. Author: Ed Bacon

Fred Fish Disk 642

AutoCLIA "PopCLI" type replacement that works with WorkBench 2.0 and fully compatible with A3000+ accelerator boards. Always retains the default path and stack, and current directory. Can automatically open CLI/SHL windows to 1 pixel less than the current screen size on opening. New functions include spline patterning on blanking, toggle freeze mouse, more function keys, mouse activated screen shuffle, close gadgets on Shell windows, and more as many users have requested. This is version 2.15, an update to version 2.17 on disk 617. Binary only. Author: Nic Wilson

EditKeys A keypad editor. Supports editing of string, dead and modifiable keys, as well as control of repeatable and capsable status of each key. Runs equally well under AmigaDOS 1.3 or 2.0. If running under AmigaDOS 1.3, requires "arp.library". This is version 1.2. Includes source in assembly. Author: David Kinder

IFF A program to display single or multiple IFF files from Workbench or CLI. It has been written in 100% assembler to be as small and fast as possible. This is version 1.7, an update to version 1.6 on disk 619. Binary only. Author: Nic Wilson

Set040 A program to remap Kickstart V2.04 or greater from ROM into 32 Bit Ram on an Amiga equipped with a 68040 CPU, using the MMU, with optional parameters for greater compatibility between various 68040 boards and optional patch to stop drives from clicking. It can also load a different Kickstart than the one currently in ROM, manipulate both caches, and display information regarding some 68040 registers and modes. Version 1.15, an update to version 1.14 on disk 628. Includes source code in assembly. Author: Nic Wilson

SysInfo A program which reports interesting information about the configuration of your machine, including some speed comparisons with other configurations, versions of the OS software, etc. This program has been very popular with many users and has been fully updated to include many new functions. This is version 2.69, an update to version 2.62 on disk 625. Binary only. Author: Nic Wilson

VS2PR Converts files to and from VideoScape 3D and PageRender 3D. It preserves and matches colors as closely as possible, and retains surface detail polygons from VideoScape. Good for Video Toaster owners looking for the more mathematical 3D objects that PageRender generates so well. Other features include scaling, batch processing, and a QuickRender module that lets you preview the 3D objects in wireframe. This is version 1.0, binary only. Author: Syd Bolton

Fred Fish Disk 643

4Wins A simple little WorkBench game where the first one to get four happy faces in a row wins. Author: Kay Gergs

DSDemo Demo version of Distant Suns, an Amiga planetarium program that has collected numerous awards. Comes in two versions,



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one that runs under AmigaDOS 1.3 and uses software floating point, and another that runs under AmigaDOS 2.0 and requires a hardware floating point coprocessor. The demo includes a star database with approximately 3700 stars, some limited lunar images, and Halley's comet. Requires 1 Mb of memory. This is version 4.1, binary only. Author: Mike Smithwick

Install A replacement for the AmigaDOS Install command, with an intuition front end. This is version 1.1. Includes source in assembly. Author: David Kinder

PCTask PC-Task is a software IBM-PC emulator. It allows you to run the majority of IBM-PC software on your Amiga with no additional hardware. Runs just like a normal application allowing multitasking to continue. The program has a graphical user interface and no additional filesystem/device mounting is required. A few clicks with the mouse and it is operational. CGA, MDA, Serial, Parallel, Mouse, 2 Floppy drives and 2 Hard drives are emulated. The hard drives can be partitions or hard drive files like the bridgeboard can use. This is demonstration version 1.04. Full version is available from the author. Binary only. Author: Chris Hames

Fred Fish Disk 644

FontConverter Converts standard font files into C code structures that can be included directly in your program. Probably most useful for people writing programs that take over the machine and thus do not have access to the standard fonts directory. Includes source. Author: Andreas Baum

SystemInfo A system configuration display program with an intuition interface. Recognizes about 80 different product codes and about 40 manufacturer IDs. Displays information about all AutoConfig cards, all mounted drives, vectors, processor types, and other useful information. This is version 2.0a, shareware, binary only. Author: Paul Kolenbrander

Unsporting Another cute Aerolon animation from Eric Schwartz, starring the A-10 Thunderbolt aircraft, better known as the "Warthog". This aircraft's job is to hunt and destroy tanks and other things on the ground, and that is exactly the subject of this animation. Requires approximately 2Mb of memory. Author: Eric Schwartz

Fred Fish Disk 645

DMD A package that adds many powerful features to DME, including outlining and word processing capabilities. Word processing features include spell checking, ANSI code insertion, pagination, double spacing, text justification, requester for inserting any character, find & replace requester, and intelligent paragraph reformatting. Outlining features allow you to write and renumber outlines. Includes many AREXX macros, a large ".edrc" file, a spell checking program, and a dictionary. Version 2.00. Author: Fergus Dunio

Elvis A UNIX vi/xx editor clone. Supports nearly all the vi/xx commands, in both visual mode and colon mode. Like vi/xx, elvis stores most of the text in a temporary file, allowing it to edit files that are too large to fit in memory, and the edit buffer can survive a power failure or crash. Also supports most vi ".exrc" definitions, supports user defined TERM and TERMCAP environment variables, works over an AUX: port, supports function keys and arrow keys, and more. This is version 1.5. Includes source. Author: Steve Kirkendall, Amiga port by Mike Rieser

HDFixer Some of the newer A3000's have high density floppy drives. In the 37.175 version of kickstart, HD disks are not completely supported in HD mode. This program patches the system so that kickstart V37.175 owners are able to use 1.71 MB HD disks in the floppy drive. Requires Workbench 2.04. This is version 1.00, binary only. Author: Peter-Iver Eder

Fred Fish Disk 646

AppliGen An Application Generator for Superbase III. Create the SBPro DML program's menus without having to do the same work over and over. Creates Superbase DML sources with menus, labels, opening of files, queries, etc. Many user-selectable options (including all SBPro SET commands). Menus can be previewed as intuition menus or text-menus. Sources and included sub-routines can be syntax checked, and exported as ASCII or ".sbp" file. Version 1.0 interpreted language source and executable. Author: Ivo Kroone

KCommodity Multifunctional commodity for OS 2.0. Includes window-activator, time-display in several modes and formats, alarm function, KeyStroke-Clicker, time to environment, Window/Screen cycling, LeftyMouse, ESC-Key can close Windows, Revision Control System, telephone bill calculator, Screen-/Mouse-Blanker, Mapping of german "Umlauts". PopUp Shell. Application support, LeftyMouse, user definable HotKeys. Fully controllable via AREXX-Port. All settings can be customized

Fred Fish Disk 647

Dog A puzzle where the object is to push boxes to designated locations. Uses HAM mode and is written in JForth. Relative difficulty for this puzzle is easy, but it will take over a half hour for most people to find the solution. This is version 1.0, binary only. Author: David M Cole

Fred Fish Disk 648

Job Manager is a utility which extends the AmigaDOS multi-tasking environment by providing features such as: allocation of CPU cycles in any ratio to multiple CPU bound processes, default task priorities based on task name, task logging, system uptime reports, task CPU use and CPU % reports, task invocation times, and more. JM has very little impact on the system itself. Requires AmigaDOS 2.04 or later. Includes 68000/20 and 68030/40 versions. Version 1.1, an update to version 1.0 on disk 602. New features include better task name detection, an AREXX port, and a number of bug fixes. Binary only. Author: Steve Koren

Fred Fish Disk 649

Nova A puzzle where the object is to push boxes to designated locations. Uses HAM mode and is written in JForth. Relative difficulty for this puzzle is advanced, and it will take over two hours for most people to find the solution. This is version 2.0, binary only. Author: David M Cole

Fred Fish Disk 650

PowerPlayer A very powerful, user friendly and system friendly module player. It can handle nearly all useful module-formats (Noisetacker, MED, Oktalyzer, etc.), can read powerpacked modules and comes along with its own cruncher that uses the powerful lib library written by Krelli/Barthel. Needs the powerpacker library and the rectools library to run, both included in the package. Also includes some sample modules. Version 2.1, freeware, binary only. Author: Stephan Fuhrmann

Fred Fish Disk 651

PrintDump A program that will allow you to view or print out the voice data in a Yamaha 32 voice bulk dump file. Allows you to choose any single voice to display or print, or it will display or print all the voices in the dump file. Includes source. Author: Chuck Brand

Fred Fish Disk 652

VcEd A Voice (Tone) Editor for the Yamaha 4 Operator series synthesizers. Version 2.0, an update to version on disk 345. Binary only, source available from author. Author: Chuck Brand

Fred Fish Disk 653

YamEx A System Exclusive and Voice Librarian program for all Yamaha 4 Operator synthesizers. Works with all 100 voice and 32 voice Yamaha bulk dumps. Binary only. Source code available from author. Author: Chuck Brand

Fred Fish Disk 654

AddAssign A small system patch and replacement for the standard CLI commands 'assign' and 'path'. With AddAssign, you may assign a logical device (like 'C:') to one OR MORE physical devices or directories. AddAssign is especially useful for programs which need a library or something else in a specified path, but you don't want them to be there. Version 1.04, shareware, includes source. Author: Alexander Rawass

Fred Fish Disk 655

AnticicloVir A link virus detector that detects 18 different such viruses. Version 1.2, an update to version 1.1 on disk 611. Includes source in assembly. Author: Matthias Gutt

Fred Fish Disk 656

Vertex A 3D object editor with many features. Has an easy to use interface with many user selectable options. The main view can be easily rotated, positioned or scaled with the mouse, which makes the editor fast and responsive. Special features include fractals, multiply command, point and click editing, an AREXX interface and much more. This is version 1.36.3, an update to version 1.28 on disk 608. Shareware, binary only. Author: Alexander D. Deburie

Fred Fish Disk 657

AMancala This is a slightly modified variant of an old African board game called Mancala. Zero, one and two player mode, six computer playertypes, protocol function, 12 ranking lists maintained. Also a short online manual, SingleStep-Learn-Mode and two display modes (numerical, graphical) provided. Usage from both Workbench and CLI supported. Compatible with Kickstart 1.3 and 2.0. This is Version 1.19, binary only, shareware. Author: Thorsten Koschinski

Fred Fish Disk 658

BrowserII A "Programmer's Workbench". Allows you to easily and conveniently move, copy, rename, and delete files & directories using the mouse. Also provides a method to execute either Workbench or CLI programs by double-clicking them or by self-executing them from a ParM like Menu with lots of arguments. Version 2.04, an update to version 1.0 on disk 540. Binary only. Author: Sylvain Rougier, Pierre Carrette

Fred Fish Disk 659

CLIExx A XIcon style program. It allows you to execute a script from WB and is completely CLI compatible, because it is a CLI. Can use a real script file or take commands in its own TOOLTYPES. Version 1.1, an update to version 1.0 on disk 540. Includes source in C. Author: Sylvain Rougier

Fred Fish Disk 660

LoadLib Another LoadLib program, but this version take unlimited number of arguments in both CLI/WB and remove the quote (") so it can work in BrowserII at any time. Pure so you can put it in your resident list. Version 1.0, includes source in C. Author: Sylvain Rougier

Fred Fish Disk 661

ParM Parameterable Menu. ParM allows you to build menus to run whatever program you have on a disk. ParM can run programs either in Workbench or CLI mode. This is an alternative to MyMenu which can run only when Workbench is loaded. ParM can have its own little window, can attach menus to the CLI window you are running it from, or to the WB menus, just like MyMenu. This is version 3.6, an update to version 3.00 on disk 540. Includes source in C. Author: Sylvain Rougier, Pierre Carrette

Fred Fish Disk 662

Support Some libraries and other stuff used by other programs on this disk. Placed here simply to avoid lots of duplication. Author: Various

Fred Fish Disk 663

EraseDisk A small, fast program used to erase a disk by setting all bits on the disk to zero. Version 0.92, an update to version 0.69 on disk 544. Binary only. Author: Otto Bernhart

Fred Fish Disk 664

MountShare Allows you to reuse the loaded code from one device for other devices that are applicable. Using MountShare, you specify a master device whose handler will be reused by other devices. Author: Olaf R'hailto Seibert

Fred Fish Disk 665

OwnDevUnit A package that provides an extended locking mechanism for a device/unit pair that makes using programs like getty much easier. Getty is a program that sits on the serial port waiting for calls to come in. By using OwnDevUnit library, a program can request that getty temporarily release the serial port. Version 2.1, an update to version 2.0 on disk 577. Includes source. Author: Christopher Wichura

Fred Fish Disk 666

P-Animate A full 3D Animation program for producing animations in Anim5 format, with emphasis on live characters rather than inanimate objects. Can also be used to produce animated illustrations for use in P-Reader illustrated texts. Version 2.1, freeware, binary only. Author: Chas A Wyndham

Fred Fish Disk 667

P-Compress A compression program that produces smaller files faster than any other current general-purpose cruncher, using LZH compression algorithms. Can handle single files, whole drawers, disks, or selected files or types of file within drawers and disks. Includes compression and decompression object files which can be linked to your own programs to allow them to access and output data in LZH format. Version 2.3, an update to version 2.1 on disk 595, with substantial enhancements. Freeware, binary only. Author: Chas A Wyndham, LZH code by Barthel/Krekel

Fred Fish Disk 668

P-FixLib A new P-Suite utility that diverts calls to DOS library so that P-Compressed files are decompressed before being opened or executed. Any type of file, including icons, executables, libraries, fonts, texts, etc. may be compressed. Effectively doubles the capacity of your disks. Version 1.2, freeware, binary only. Author: Chas A Wyndham

Fred Fish Disk 669

To Be Continued.....

Fred Fish Disk 670

In Conclusion
To the best of our knowledge, the materials in this library are freely distributable. This means they were either publicly posted and placed in the public domain by their authors, or they have restrictions published in their files to which we have adhered. If you become aware of any violation of the authors' wishes, please contact us by mail.

Fred Fish Disk 671

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And furthermore...

The Great Amiga Railroad

by Jeff Gamble



Earlier this year, as we at AC were brainstorming for display ideas for the World of Commodore show in New York City, someone suggested building a giant model railroad. At first it seemed silly; what would a model railroad be doing at a computer show? Well, what if it were computer controlled?

We contacted Perry Kivolowitz at A.S.D.G., another group of model railroaders—and Amiga developers—and asked them the all-important question: can it be done? Their answer was yes—they had been toying with the idea already! We then contacted Jeff Scherb, model railroader and vice-president of Applications and Technical Support at Commodore, to ask if he would be willing to provide any technical assistance. He too was more than willing to help.

The powerful combination of the Amiga and the train controller make computerized railroading fun.

It was final: ASDG would do the hardware and software to run the trains, and *Amazing Computing* would provide the model layout. We have a packed schedule, and as it is, barely have enough time to work on our own layouts between magazine issues—never mind building a 15 x 15 foot display from scratch in less than two months! But, with the total cooperation of the entire staff at AC, we were able to finish the layout.

A.S.D.G. had the difficult task of creating the hardware and the software interface. The software had to be mouse-controlled with buttons and sliders, and the control panel itself had to be clear and organized. The operator had to be able to control the throttles for the trains and operate the turnouts and other special effects quickly and easily to allow smooth operation of the trains.

A.S.D.G. came through. Contained in a project box were a 12V power supply and a circuit board. The box was controlled by software which ran on an Amiga 2000. (The package could be run on any Amiga in 68000 mode.) By using the mouse, the operator could control two train throttles, eight turnouts, eight lighting or special effects, and assorted IFF sample sounds to eight different speakers. Any train accessory that can be turned on and off could be wired to the interface. The software also controlled a trolley track. It sent the trolley from one end of the track to the other, pausing it for a set amount of time at each end before reversing its direction.

Basically, all the software did was turn switches on and off. The tracks, turnouts, and trolley were all wired to the black box. The software interface controlled the "black box" which regulated the power supply for the throttles and turned the switches on and off. A.S.D.G. programmer Dan Esenther was responsible for the creation of the hardware/software combo.

This was an enjoyable project. It's great to be able to show people how versatile the Amiga really is. With the Amiga's multitasking capabilities, you could run the controller and perhaps a Card Order System—created with AmigaVision or HyperBook or the like—or one of those miniature video cameras mounted inside the engine from Lionel feeding to an Impact Vision 24 for Picture-in-Picture or other neat effects. If this catches on, model railroading will never be the same.

If you are interested in seeing the train controller developed commercially, we encourage you to write A.S.D.G.

•AC•

Amiga Train Controller
A.S.D.G., Inc.
925 Stewart St.
Madison, WI 53713



Amazing/AMIGA FREE INFORMATION!

Name _____
 Street _____
 City _____ ST. _____ Zip _____
 Country _____

- A. Which of the following do you now own?
 (please check all that apply)
 O 1. Amiga 500 O 4. Amiga 2500
 O 2. Amiga 1000 O 5. Amiga 3000
 O 3. Amiga 2000 O 6. Do not own an Amiga
- B. If none of the above, which do you plan to buy soon?
 O 7. Amiga 3000 O 9. Amiga 2000
 O 8. Amiga 2500 O 10. Amiga 500
- C. Which Amiga hardware product do you plan to buy next?
 O 11. memory expansion O 15. modem
 O 12. hard drive O 16. music tool
 O 13. IBM emulators O 17. video product
 O 14. printer O 18. accelerator
 O 19. other (please specify): _____
- D. Which Amiga software product do you plan to buy next?
 O 20. C language O 27. spreadsheet
 O 21. Forth language O 28. database
 O 22. Modula-2 language O 29. financial
 O 23. Assembly language O 30. video
 O 24. BASIC language O 31. graphics
 O 25. entertainment O 32. music
 O 26. telecommunications O 33. other (please specify): _____
- E. How much money are you likely to spend on all Amiga product purchases this year?
 O 34. \$0-\$250 O 38. \$1501-\$2000
 O 35. \$251-\$500 O 39. \$2001-\$4000
 O 36. \$501-\$1000 O 40. over \$4000
 O 37. \$1001-\$1500
- F. Where do you buy Amiga products?
 O 41. local Amiga Dealer O 43. manufacturer
 O 42. discount department store O 44. mail order
- G. How many times have you purchased an Amiga product after seeing it advertised in AC?
 O 45. frequently O 47. once
 O 46. occasionally O 48. never
- H. How do you obtain your copy of AC monthly?
 O 49. subscribe (how long: _____ years)
 O 50. buy at local Amiga dealer
 O 51. buy at bookstore/newsstand/software store
- I. How many others not including yourself usually see or read your issue of AC each month?
 O 52. other: _____
- J. How do you read AC each month? (please check one)
 O 53. _____ others, in addition to myself
 O 54. read virtually everything, cover-to-cover
 O 55. scan through pages and read items of interest only
 O 56. check table of contents and maybe read 1-2 articles
 O 57. read my favorite column(s) only
 O 58. read very little of it
- K. Have you ever purchased a copy of AC's GUIDE?
 O 59. yes—but only once. O 61. no—but plan to soon.
 O 60. yes—two or more times. O 62. no—not interested.
 O 63. no—use my dealer's copy.
- L. Have you ever purchased a copy or subscribed to AC's TECH?
 O 59. yes—but only once. O 61. no—but plan to soon.
 O 60. yes—two or more times. O 62. no—not interested.
 O 63. no—use my dealer's copy.

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Amazing/AMIGA FREE INFORMATION!

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 Street _____
 City _____ ST. _____ Zip _____
 Country _____

- A. Which of the following do you now own?
 (please check all that apply)
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 O 3. Amiga 2000 O 6. Do not own an Amiga
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 O 23. Assembly language O 30. video
 O 24. BASIC language O 31. graphics
 O 25. entertainment O 32. music
 O 26. telecommunications O 33. other (please specify): _____
- E. How much money are you likely to spend on all Amiga product purchases this year?
 O 34. \$0-\$250 O 38. \$1501-\$2000
 O 35. \$251-\$500 O 39. \$2001-\$4000
 O 36. \$501-\$1000 O 40. over \$4000
 O 37. \$1001-\$1500
- F. Where do you buy Amiga products?
 O 41. local Amiga Dealer O 43. manufacturer
 O 42. discount department store O 44. mail order
- G. How many times have you purchased an Amiga product after seeing it advertised in AC?
 O 45. frequently O 47. once
 O 46. occasionally O 48. never
- H. How do you obtain your copy of AC monthly?
 O 49. subscribe (how long: _____ years)
 O 50. buy at local Amiga dealer
 O 51. buy at bookstore/newsstand/software store
- I. How many others not including yourself usually see or read your issue of AC each month?
 O 52. other: _____
- J. How do you read AC each month? (please check one)
 O 53. _____ others, in addition to myself
 O 54. read virtually everything, cover-to-cover
 O 55. scan through pages and read items of interest only
 O 56. check table of contents and maybe read 1-2 articles
 O 57. read my favorite column(s) only
 O 58. read very little of it
- K. Have you ever purchased a copy of AC's GUIDE?
 O 59. yes—but only once. O 61. no—but plan to soon.
 O 60. yes—two or more times. O 62. no—not interested.
 O 63. no—use my dealer's copy.
- L. Have you ever purchased a copy or subscribed to AC's TECH?
 O 59. yes—but only once. O 61. no—but plan to soon.
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AC July 1992 valid until 8/30/92.
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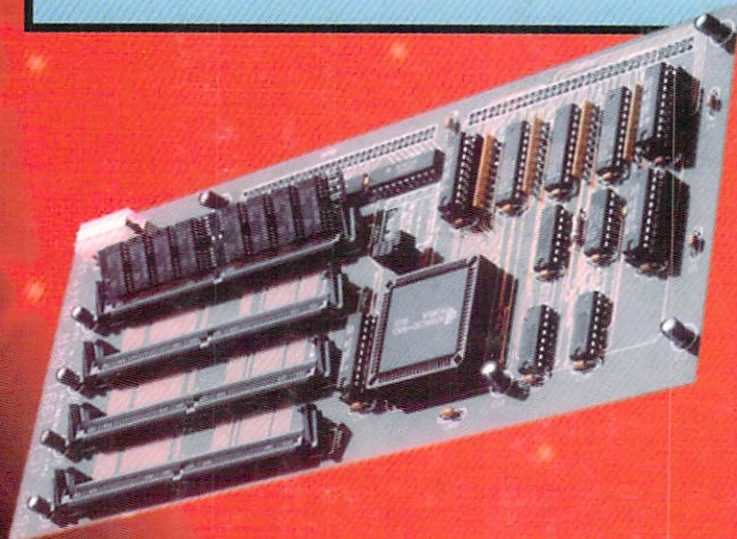
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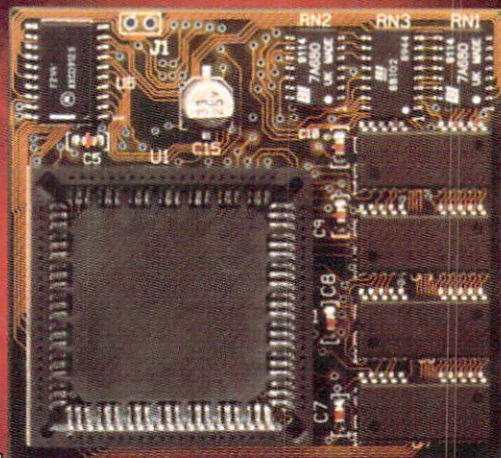
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